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ABSTRACT

Intended for curriculum developers, this revised Framework presents a set of basic concepts for teaching K-12 economics. The revision reflects the change and development which the field of economics has undergone and includes improvements suggested by users of the first edition. The purpose of teaching economics is to impart a general understanding of how our economy works and to improve economic decision making by students through the use of an orderly, reasoned approach. Chapters I, II, and III provide a brief introduction to the publication, discuss the elements of economic understanding, and list and describe some basic economic concepts. Chapter IV discusses the broad social goals that seem most important in the United States today, the problem of trade-offs among goals, and the role of self-interest and personal values. Chapter V illustrates the use of a decision-making model with two economic issues involving public policy. The concluding chapter, chapter VI, discusses the grade placement of the economic concepts. (RM)

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MASTER CURRICULUM
GUIDE IN ECONOMICS

A FRAMEWORK FOR TEACHING THE BASIC CONCEPTS

SECOND EDITION

Phillip Saunders, Chair
G.L. Bach
James D. Calderwood
W. Lee Hansen

With contributions from Herbert Stein

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Joint Council on Economic Education

JCEE Checklist No. 335

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FOREWORD

The first edition of this *Framework*, the initial volume in the Joint Council of Economic Education's Master Curriculum Guide in Economics, was published in 1977 with gratifying results. It provided the foundation for a series of *Teaching Strategies* that demonstrate how to introduce the conceptual framework of economics at various grade levels. To date, the Joint Council has published seven *Strategies* volumes, and will publish more. In addition, the Joint Council, the Agency for Instructional Television, and the Canadian Foundation for Economic Education have produced two television/film series, *Trade-offs* and *Give & Take*, based on the *Framework*. Both series are used extensively in the United States and Canada. The *Framework* has also influenced the approach taken to economics in textbooks and other curriculum materials at both the elementary and secondary school levels and has served as the basis of many state and local programs for teaching economics.

Two considerations led the Joint Council to publish a revised edition of the *Framework*: a recognition that the subject matter of economics—as of every discipline—undergoes continual growth and development, and a desire to make improvements suggested by users of the first edition.

There are many to whom we owe thanks for their contributions to this new edition. They include the economists who wrote it and the reviewers of earlier drafts. We are also grateful to the funders who supported this effort: The Amoco Foundation, Inc.; Exxon Company, U.S.A.; the Calvin K. Kazanjian Economics Foundation, Inc.; and the Northrop Corporation.

Members of the Joint Council staff who have worked on this project include John M. Sumansky, program director; S. Stowell Symmes, school services director; June V. Gilliard, curriculum director; and Lawrence A. Mayer and Ester Moskowitz, respectively director and associate director of the Publications Division.

Michael A. MacDowell
President, JCEE

PREFACE

As explained elsewhere in this volume, the experience gained from the use of the first edition of the *Framework* and the passage of time have made it advisable for the Joint Council on Economic Education to publish this revised edition. This revision still reflects the heavy emphasis on economics as a way of thinking, rather than a set of answers, which was contained in the *Report of the National Task Force on Economic Education*, published in 1961. It also reflects the major contribution of W. Lee Hansen, who provided the leadership that led to the first edition of this *Framework* in 1977. We had hoped to have Herbert Stein join us as a co-author of this revised edition, but his busy schedule and other commitments prevented him from doing this. Mr. Stein was able to review the revised manuscript and offer several useful suggestions for improvement, however, and we have also benefited from comments and suggestions from the following people in addition to Herbert Stein.

Beverly Armento
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June V. Gilliard, the Joint Council's curriculum director, made a significant contribution to our work through her analysis of teaching activities in the *Strategies* volumes. Lawrence A. Mayer and Ester Moskowitz have provided extremely valuable editorial assistance, particularly in the section dealing with measurement concepts and methods. Linda Steinwachs typed and retyped the manuscript.

We are grateful to all of these people for their help and assistance, and we hope that this revision will prove useful to those working on the important task of improving economic understanding.

PHILLIP SAUNDERS, Chair
Framework Revision Committee

I. Introduction

The purpose of this *Framework* is to present a concisely stated set of basic concepts for teaching economics in schools below the college level. The *Framework* defines and describes the concepts that we believe are most useful in achieving a larger educational objective—that of enabling students, by the time they graduate from high school, to understand enough economics to make reasoned judgments about economic questions. These include personal economic questions as well as broader matters of economic policy that students will face as members of a democratic society. Learning to make reasoned judgments about economic questions will help students become more effective decisionmakers and more responsible citizens. Indeed, the most important step toward understanding in economics—as in other branches of knowledge—is the replacement of emotional judgment by objective, reasoned analysis.

This edition of the *Framework* volume of the Joint Council on Economic Education's Master Curriculum Guide in Economics is a revision of our 1977 effort. Like its predecessor, it is designed primarily for those who construct curricula or who spell out the grade placement and most appropriate methods of teaching economic concepts in K–12 classes. It also provides background for classroom teachers who use the *Teaching Strategies* volumes, which form the remainder of the Master Curriculum Guide in Economics.

A Brief History of the *Framework*

The 1977 edition of the *Framework* had its roots in the 1961 *Report of the National Task Force on Economic Education*—the first systematic effort by distinguished economists and teachers to give direction and shape to economic education in grades K–12. The 1961 report pointed to the need for more and improved economic instruction in elementary and secondary schools, stressed the importance of taking a more systematic, reasoned approach to the study of economic problems, outlined what constitutes "the minimal economic understanding for responsible citizenship," and offered a series of recommendations for putting the *Report*'s conclusions into effect.

Publication of the Task Force *Report* led the Joint Council on Economic Education (JCEE) to develop a process called the Developmental Economic Education Program (DEEP). The DEEP process is still in action and much expanded. Through it, the JCEE works with school systems to develop curricula for teaching the "minimal economic understanding" every high school graduate should have, to determine how this understanding can best be taught to students, and to designate at which grade levels specific economic materials can best be used in the curriculum.

During the 1960s, economic educators and teachers—in and out of DEEP—continued to develop curriculum materials in economics and to upgrade the capability of teachers to work with them. By the mid-1970s, persistent efforts of economists, specialists in economic education (economic educators), and teachers to clarify which economic concepts should be taught and how to teach them most effectively produced a consensus about what could be accomplished and how it should be done. This consensus embraces the following points:

1. An understanding of basic economic concepts is more important than a heavy dose of factual knowledge.
2. Instructional efforts should concentrate on aiding students to achieve a fundamental understanding of a limited set of economic concepts and their interrelationships.
3. Students should be given a conceptual framework to help them organize their understanding of economics, and they should be exposed to a manner of thinking that emphasizes systematic, objective analysis.
4. The real personal and social advantages of economic understanding become apparent as individuals achieve competence in applying their knowledge to a wide range of economic issues they themselves confront.

Background of the Revision

The first edition of the *Framework* has been widely used and highly acclaimed. Nevertheless, as the years passed, improvements in its contents were suggested, some shortcomings in its organization were pointed out, and some emphases in economics subject matter changed. These reasons impelled us to put forward the present revision. It builds on the continuing work of DEEP and on efforts of scholars, teachers, and economic educators as they have learned more about the structure and content of economics that should and can be taught in grades K–12.

First and foremost, the revision incorporates changes suggested to us by those who use the *Framework* extensively in teacher training courses and in classrooms. Second, it reflects our attempts to sharpen the contents. These improvements involve (1) a greater consistency and precision in the definitions of various economic concepts; (2) a few alterations in how particular concepts are presented; (3) a special attempt to clarify the measurement concepts and methods; (4) a revised set of examples showing how to apply a reasoned approach to particular economic issues. Finally, we have added a brief statement on the grade placement of the economic concepts, a matter not addressed in the original *Framework*.

Our discussions and examples focus largely on the kinds of issues that have been traditionally treated in the discipline of economics. However, we recognize that when properly employed, approaches with other orientations—such as personal economics—can help students learn the basic concepts of economics and how to use these concepts in their own lives and communities.

The Objectives of Economic Education

What is economics all about? And what are the objectives of economic education? The following statement answers the first of these two important questions.

> Economics is the study of how the goods and services we want get produced, and how they are distributed among us. This part we call *economic analysis*. Economics is also the study of how we can make the system of production and distribution work better. This part we call *economic policy*. Economic analysis is the necessary foundation for sound economic policy . . . .
>
> Another, slightly different, definition of economics, favored by many economists, is this: *Economics is the study of how our scarce productive resources are used to satisfy human wants.* This definition emphasizes two central points. *First, productive resources are scarce,* in the sense that we are not able to produce all of everything that everyone wants free; thus, we must "economize" our resources, or use them as efficiently as possible. *Second, human wants, if not infinite, go so far beyond the ability of our productive resources to satisfy them all that we face a major problem in "economizing" those productive resources so as to satisfy the largest possible number of our wants.* Indeed, most major economic problems arise from this fact of scarcity, and the need to make effective use of our resources to satisfy our wants. If there were plenty of everything for everyone to have without working or paying for it, there would be no economic problem. But, alas, this is not the state of the world, even in the affluent American society, and certainly not in the poorer nations that contain most of the world's people.*

As we stated earlier, we take the objective of economic education to be to prepare students for effective decision-making and responsible citizenship. What do those high-sounding words mean? What kinds of economic questions will high school graduates be most likely to confront as adults, and in what settings will the graduates confront such questions? What do the answers to such questions imply for the kinds of knowledge and skills students will need in later years?

THE QUESTIONS AND THEIR SETTINGS

Regardless of educational background, adults will be exposed to a wide variety of economic questions during their lifetimes. The conclusions they reach will be reflected in how they vote; in the actions they take in their workplaces, unions or trade associations, and civic organizations; and in the economic decisions they make as consumers, producers, savers, and investors. The quality of individual decision-making in these situations is crucial to the effective operation of our economic system and to the personal well-being of its members.

A NEED FOR KNOWLEDGE, A SEARCH FOR SKILLS

If the purposes of economic education are to be achieved, individuals must be helped to become intelligent readers of newspapers and newsmagazines, perceptive watchers of television, careful listeners to radio, and critical observers of the political process. Such abilities require many kinds of knowledge and skills: the capacity to grasp the economic aspects of particular issues; a willingness to pursue a reasoned, dispassionate approach to such issues; comprehension of the basic economic concepts; command of a framework for understanding the economic system; and the ability to combine several elements of

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*This statement on the nature of economics is taken from George Leland Bach, *Economics: An Introduction to Analysis and Policy*, 10th ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1980), p. 3. Emphasis in original.

economic knowledge when addressing specific questions. If these objectives are achieved, young people should be able to approach new as well as long-standing economic issues with intelligence and understanding.

SOME BARRIERS TO EFFECTIVE TEACHING OF ECONOMICS

We are aware of the hurdles that must be overcome in raising the level of economic understanding—particularly through improved education in the schools. The time allocated to economics in school curricula has always been limited. It may become even more limited as efforts are made to improve the teaching and learning of traditional basic subjects. As a result, whatever knowledge of economics students acquire comes and will come principally through the introduction of economics into other subjects such as social studies, history, home economics, and business education. Moreover, teachers' sometimes limited understanding of economics restricts the effectiveness of whatever economics instruction does occur.

The State of Economic Understanding

All this said, a few cautions about the present state of economic understanding are in order. Recent experience makes it clear that economists do not have all the answers to the many and varied economic issues and questions we confront both personally and as members of the larger socioeconomic system. Here are two examples. Although economists believe they now have the knowledge and tools to prevent massive economic depressions such as the one that occurred in the 1930s, much remains to be learned about how to moderate inflation while still holding down the rate of unemployment. And the issue of what the extent of the government's role in our economy should be remains unresolved.

There are several reasons why answers to the problems economists confront are not always found. Economic systems are complex and defy easy comprehension. Moreover, our ability to know exactly how effectively the economy and its components function is often limited by the difficulty of obtaining accurate and timely measurements of economic activity. Finally, a variety of unanticipated political and social events affects economic activity and makes accurate prediction of the results of economic decisions very difficult. Unlike the situation in the physical sciences, carefully controlled experiments are difficult to undertake in economics.

Even if our understanding of the economy and economic decision-making were further improved, not all disagreements among economists would vanish. Certainly, some disagreements will be resolved as our understanding increases. Many will persist, however, because of differences in judgments about the actual or predicted effects of specific decisions; still others will endure because individual economists, like most other individuals, hold differing sets of values.

A failure to distinguish between analysis (what *is* happening) and value judgments (what *ought to be* happening) is the source of much confusion in many discussions of economic problems. The first approach, often called "positive economics," aims to understand how the economy works. In principle, disputes about positive economic statements can be settled by facts and evidence. The second approach, often called "normative economics," deals with the way the economy, or some part of it, ought to work. Normative economic statements cannot be called true or false by referring to objective data. Positive economics can do much to help resolve economic disputes. However, many questions that concern economic policy involve reconciling differences in normative values. On normative questions, people must apply their capacity to make reasoned decisions based on their own values.

As this is being written, the discipline of economics is alive with controversy and discontent: there are several "schools" of economics; there are calls for making economic analysis more realistic by explicitly introducing more aspects of political science, sociology, psychology, law, and the like into the discipline; there exists dissatisfaction with how much economists have contributed to improving the economy's performance.

Despite the foregoing shortcomings and problems, we believe that the study of economics can give students a richer understanding of the world in which they live, study, and work, as well as provide them with a conceptual framework for making some of the more significant decisions of their lives.

II. The Elements of Economic Understanding

The essence of economic understanding lies in being able to make sense out of the array of economic facts, events, observations, and issues that unfold before us, and in being able to make effective decisions about economic issues. The key elements of that understanding are the following:

- *Mastery of the basic concepts of economics.* Like all other disciplines, economics has its own tools of analysis and "language," and students should know these well.
- *An appreciation of how the principal concepts of economics relate to each other.* Such an appreciation enables students to deal with the complex "real world" economic problems they will face as adults.
- *Comprehension of the structure of the economy.* This comprehension should also include a knowledge of how the various components and sectors of the economy interact.
- *Knowledge about major economic concerns—both public and personal.* Such knowledge and some understanding of how public and personal economic issues relate to each other provide a basis for grasping how individual actions shape and are shaped by economic forces.
- *Exercise of a reasoned approach to economic decisions.* Economic decisions can be reached more effectively if an objective, orderly, and reasoned approach replaces emotional, unreasoned judgments.

A Reasoned Approach

An orderly and reasoned approach to economic decision-making involves the following steps:

1. *State the problem or issue.* What are the important facts? What questions of choice are raised? What is the heart of the problem?
2. *Determine the personal or broad social goals to be attained.* Assign some rough order of priority for achieving them.
3. *Consider the principal alternative means of achieving these goals.* Take account of the limits on available resources and other restrictions that limit freedom of action.
4. *Select the economic concepts needed to understand the problem and use them to appraise the merits of each alternative.* Which concepts are most useful in grasping the essentials of the problem? Which concepts are most useful in exploring the effect of each alternative solution?

5. *Decide which alternative best leads to the attainment of the most goals or the most important goals.* Which of the solutions seem to be most feasible? Which are the most desirable? What are the trade-offs among the different goals, that is, how much of one goal must be given up in order to achieve more of another?

The importance of an orderly and reasoned approach lies in the systematic set of procedures it establishes to help students organize their thinking about issues—whether in economics or in other subjects. Although the approach may not come naturally to everyone, its application comes more easily, even routinely, the more it is practiced.

In advancing the reasoned approach as an essential element for solving economic problems effectively, teachers should observe several cautions: (1) The phrase "alternative means of achieving these goals" in the third step does not mean students should consider only new and different ways of doing things. Frequently, no change, or merely a slight modification in the existing ways of doing things, is superior to some untried proposal. (2) Not every question or new problem in economics should be forced into the pattern proposed above; only those steps applicable to a particular problem—or to the state of the student's knowledge and ability—should be carried out. (3) The application of an orderly and reasoned approach should not be permitted to become a mechanical exercise.

Decision-making Grids

In many cases, use of a formal decision-making grid facilitates application of the reasoned approach. Exhibit 1 illustrates such a grid: the alternative courses of action (including doing nothing) are listed in the first column on the left, and the goals or criteria for evaluating alternatives are listed across the top row. The intersection of the rows and columns creates boxes or "cells" which match up each goal or criterion with each alternative. The evaluation marks placed in the cells of the grid can take various forms. For example, each alternative can receive a numerical ranking denoting its ability to achieve a goal or criterion (say, 1, 2, 3, 4, 5, with 1 denoting lowest ability). The numbers are

EXHIBIT 1

Sample Decision-making Grid for Systematic Evaluation of Each Alternative with Respect to Each Goal or Criterion

ALTERNATIVES	GOALS OR CRITERIA			
	Goal or Criterion 1	Goal or Criterion 2	Goal or Criterion 3	Goal or Criterion 4
Alternative 1				
Alternative 2				
Alternative 3				
Alternative 4				

written in the appropriate cells; adding the rankings row by row provides a rough measure of the overall desirability or feasibility of each alternative. Another technique is to place a plus sign (+) in a cell to show that an alternative helps meet a goal or criterion, a minus sign (−) to show that an alternative hinders meeting a goal or criterion, a zero (0) to show that an alternative neither helps nor hinders, and a question mark (?) if the effect of the alternative is unclear. In cases where alternatives differ in the extent of their ability to help or hinder, multiple pluses and minuses can be used.

A decision-making problem usually arises because a "do nothing–leave things as they are" policy has not led to the achievement of some desired goal. Before choosing the "best" alternative policy, it is often wise to check to make sure all the major alternatives and all of the relevant goals have been considered. Advocates of particular alternatives often point out only the advantages of their proposals. They frequently fail to mention other attractive alternatives or the possible costs of their own proposals. Use of a formal decision-making grid forces the weighing of alternatives against all the relevant goals and criteria. Although the systematic evaluation of alternatives does not assure unanimity when goals conflict or evaluations differ, the technique usually helps to clarify where the differences lie and the relative costs of alternatives in terms of different criteria.

Not all decisions involve public policy issues; many decisions involve personal consumption or production situations. Use of the reasoned approach and a decision-making grid is appropriate in any situation—public or personal—requiring choice-making. For example, in the lesson "Malcolm Decides," which appears in *Trade-offs* (an audiovisual series the JCEE participated in producing), a newspaper boy receives a $15 gift certificate. He can use the certificate to purchase one of several recreational items: a model airplane, a bow and arrow set, a hockey game, a soccer ball, or a portable radio. Since each of these alternatives meets the criterion of costing no more than $15, additional criteria are necessary: Will the item break easily or will it last? (durability). Will his parents approve of the item and let him use it? (parental consent). Are there any additional costs? (no other costs)—

EXHIBIT 2

Sample Decision-making Grid for Using a $15 Gift Certificate

	CRITERIA				
ALTERNATIVES	**Costs $15 or Less**	**Durability**	**Parental Consent**	**No Other Costs**	**Full-Time Use**
Airplane	+	−	+	+	+
Bow & arrow	+	+	−	+	−
Hockey game	+	+	+	−	+
Soccer ball	+	+	+	+	−
Radio	+	+	+	+	+

SOURCE: Adapted from *A guide to Trade-offs* (Bloomington, Ind.: Agency for Instructional Television, 1978), p. 9.

e.g., batteries must be purchased for the hockey game but are included in the price of the radio. Will he be able to use it any time he chooses? (full-time use).

Exhibit 2 shows the completed decision-making grid that Malcolm uses to choose the radio. By placing a plus sign (+) in each cell where an alternative meets a criterion and a minus sign (–) in each cell where an alternative does not meet a criterion, Malcolm sees that only the radio has five pluses. Each of the other alternatives has at least one minus.

Often one alternative does not meet all the goals or criteria, or all criteria are not regarded as equally important. But, even in such instances, a decision-making grid can help clarify the issues and make the decision a more reasoned one.

III. Basic Concepts

Economic concepts are the bases of economic understanding and reasoned decision-making. Economic concepts provide the analytical tools needed to understand and make reasoned decisions about economic issues—both personal and social. They also constitute the basic vocabulary of economics.

The list of concepts discussed below focuses on what we consider the most basic among the many concepts in economics, and we include some measurement concepts and methods that are helpful in understanding and explaining economic performance. Exhibit 3 lists the basic concepts taken up in this *Framework*. (The table of contents, at the beginning of this book, also lists subsidiary concepts that fall under the basic concepts.)

Although all the concepts listed in Exhibit 3 are basic to the attainment of economic understanding, they cannot all be treated alike in the K–12 curriculum. Some are easier to learn because teachers can find a greater variety of concrete examples for illustrating them. Some concepts are easier to understand because their definitions do not require prior knowledge of other concepts. Consequently, these concepts can be taught—with varying complexity—early as well as late in the K–12 curriculum. The reverse is also true. Certain concepts are complex and therefore cannot be taught with all their ramifications at all grade levels. Some are relatively difficult to learn because they involve grasping relationships among several concepts. Our statement on suitable grade placement of the concepts appears in Chapter VI.

Fundamental Economic Concepts

The basic economic problem confronting individuals, groups of individuals, and entire societies is that productive resources are limited relative to people's wants. Thus arises the basic condition of **scarcity.** Scarcity requires people to make **choices** about how to utilize available resources most effectively in order to satisfy their wants. Since most major economic problems arise from the fact of scarcity, an understanding of this concept is the starting point for an understanding of economics.

1. SCARCITY

Scarcity is the condition that results from the imbalance between relatively unlimited wants and the relatively limited resources available for satisfying those wants. No society has ever had enough resources to produce the full amount and variety of goods and services its members wanted.

Scarcity necessitates choice. If we can't have everything we would like, we must choose which things we want most. Thus, both individuals and societies must continuously make choices about how to use the scarce resources available to them. The concept of scarcity can be understood more clearly by examining the subconcepts of economic wants and productive resources.

EXHIBIT 3

Basic Concepts

FUNDAMENTAL ECONOMIC CONCEPTS

1. Scarcity
2. Opportunity Cost and Trade-offs
3. Productivity
4. Economic Systems
5. Economic Institutions and Incentives
6. Exchange, Money, and Interdependence

MICROECONOMIC CONCEPTS

7. Markets and Prices
8. Supply and Demand
9. Competition and Market Structure
10. Income Distribution
11. Market Failures
12. The Role of Government

MACROECONOMIC CONCEPTS

13. Gross National Product
14. Aggregate Supply
15. Aggregate Demand
16. Unemployment
17. Inflation and Deflation
18. Monetary Policy
19. Fiscal Policy

INTERNATIONAL ECONOMIC CONCEPTS

20. Absolute and Comparative Advantage and Barriers to Trade
21. Balance of Payments and Exchange Rates
22. International Aspects of Growth and Stability

MEASUREMENT CONCEPTS AND METHODS

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Economic Wants

In modern societies, people have a wide variety of wants. Some, such as those for love and affection, cannot easily be classified as economic in nature. Others, such as food, clothing, shelter, medical care, entertainment, and even leisure time, are wants with major economic implications. Some wants are individual, whereas others, such as a family's desire for a home or a club's desire for a recreation center, are group wants. Many wants—such as the foregoing—are private, but others are public—such as society's wants for highways, education, and national defense.

For simplicity, we can say that **economic wants** are those that can be satisfied by the consumption of a good or service. Actually, we should add the desire for leisure as an economic want, since consumers need leisure time in which to enjoy the consumption of certain goods and services. **Goods** are physically tangible things such as food, shoes, cars, and houses. **Services** are physically intangible things such as medical care, haircuts, and education. One fact that emerges clearly in the study of economics: peoples' wants for goods and services exceed society's capacity to produce them.

Productive Resources

Productive resources (sometimes called factors of production) consist of what is required to produce the goods and services that people want. There are three basic categories of productive resources.

HUMAN RESOURCES—The health, strength, education, and skills of people. The number of people available for work and the hours they work constitute only one dimension of human resources. Another dimension is the level of ability of people and their motivation. The quality of human resources reflects past efforts to improve skills, knowledge, and motivation through education and training. The ability of some people to organize economic activity by taking the risks associated with starting a new business or introducing a new good or service into the marketplace in hopes of earning a profit is given a special name, "entrepreneurship," which comes from a French word meaning "to undertake."

NATURAL RESOURCES—The gifts of nature that are used to produce goods and services. They include land, timber, fish, oil and mineral deposits, the fertility of the soil, climatic conditions suitable for growing crops, and so on. Some of these resources are used up in the process of production, others renew themselves, while still others can be renewed through the conscious efforts of people.

CAPITAL GOODS—The buildings, equipment, machinery, ports, roads, dams, and other manufactured and constructed things needed to produce or provide access to other goods and to supply services. The variety of capital goods available and how they are used reflect the state of technology, which in turn reflects existing scientific and technical knowledge and the resources devoted to developing such knowledge.

2. OPPORTUNITY COST AND TRADE-OFFS

Opportunity cost is the forgone benefit of the next best alternative when scarce resources are used for one purpose rather than another. If we use some of our limited resources for one purpose, we must give up the opportunity to use these resources for other purposes. Thus, the term "opportunity cost" refers to the most desirable of the alternatives not chosen. If, for example, a piece of land could be used for an office building, a sports stadium, a department store, or a parking garage, the opportunity cost of using the land for a department store is the loss of only the most desirable of the forgone alternatives. It is either the loss of the office building, or of the sports stadium, or of the parking garage—not all three; which of these is the most desirable can only be determined by more careful investigation. If a young college graduate chooses to become an accountant rather than a lawyer or an architect or an engineer, society's opportunity cost is not the loss of a lawyer *and* an architect *and* an engineer; opportunity cost refers only to the loss of the most important of the forgone alternatives.

Trade-offs involve accepting or choosing less of one thing to get more of something else. Individuals who choose one good or service instead of another, or more of one thing and less of another, are making a trade-off. Society also makes trade-offs, e.g., between its need for more energy and its desire to preserve the environment. Evaluating trade-offs, when done carefully and systematically, involves comparing the costs and benefits of each of the available alternatives. Trade-offs made by society also require determining how the costs and benefits of decisions affect different groups within the economy, e.g., the rich vis-à-vis the poor, city residents vis-à-vis rural residents, etc.

Most choices and trade-offs are not all-or-nothing propositions; instead, they typically involve small changes *at the margin*—a little more of this for a little less of that. Decisions about small changes at the margin are made more often than decisions about big changes, and the former are usually easier to assess than the latter. Consumers continuously practice **marginalism** as they consider whether to buy one unit more or one unit less of a good or service in an effort to obtain the mix of goods and services that will provide them with the greatest satisfaction for their available buying power. Similarly, producers must decide whether to produce one unit more or one unit less of output or to hire or lay off an additional worker in order to make the best use of their resources.

3. PRODUCTIVITY

Productivity is the amount of output (goods and services) produced per unit of input (productive resources) used. An increase in productivity means producing more goods and services with the same amount of resources; producing the same amount of goods and services with fewer resources; or a combination of these two possibilities. A dramatic example of increased productivity occurred in U.S. agriculture in the half century between 1930 and 1980, when output doubled while the number of persons directly working in agriculture dropped from 12 million to 3 million.

While productivity is often measured or referred to only in terms of the productivity of labor, a proper view of the sources of productivity incorporates the effects of all inputs to production. The three principal means of increasing productivity are: (1) specialization and the division of labor; (2) investment in capital goods, and (3) investment in human capital. All three of these means often involve a process of technological change that leads to more efficient production techniques and the creation of more goods and services. Sometimes productivity can be increased by other means, such as reorganizing the work process or relocating the production site.

Increases in productivity help reduce scarcity, but do not eliminate it entirely. Moreover, productivity increases themselves entail opportunity costs, since the resources used to enhance productivity in one endeavor cannot be employed in another. Thus, there are both costs and benefits when productivity is increased.

Specialization and the Division of Labor

Specialization occurs when an economic unit produces a narrower range of goods and services than it consumes. Specializatio can be practiced by individuals, business firms, cities, regions, or countries. Regions of countries, for example, normally specialize in the production of those goods and services they are best fitted to produce, given their particular endowment of productive resources. They then sell most of what they produce to people living elsewhere, and buy whatever else they need from other regions. What they buy may include the raw materials needed to produce the goods and services in which they specialize. Specialization is the basis of trade and exchange among individuals, businesses, cities, regions, and countries. Within the United States, for example, consumers in its various regions buy and use products originating in other regions—Idaho potatoes, Florida orange juice, Iowa corn, California vegetables, Detroit automobiles, Hartford insurance, etc.,—plus products originating abroad such as coffee, bananas, tea, clothing, and cameras. Industries do the same for the raw materials, components, and certain finished products they need.

The concept of **division of labor** is closely related to specialization, but usually refers to the process whereby workers perform only a single or a very few steps of a major production task, as when working on an assembly line. As applied to labor, the concept of specialization usually refers to a person's occupation and the special training it requires, e.g., carpenter, electrician, computer programmer, mathematics teacher, landscape architect, eye surgeon.

On the one hand, specialization in all of its forms and the division of labor usually increase productivity. On the other hand, they also reduce self-sufficiency and increase economic interdependence, thereby creating a greater need for the exchange of goods and services. The concepts of interdependence and exchange are discussed in more detail later.

Investment In Capital Goods

Investment in capital goods occurs when savings are used to increase the economy's productive capacity by financing the construction of new factories, machines, means of communication, and the like. **Saving** occurs when individuals, businesses, and the economy as a whole do not consume all of current income (or output). From an individual standpoint, savings represent income not spent. Much unspent income may be placed in financial institutions such as banks and savings and loan associations, which in turn make loans to those who wish to buy capital goods or other resources. Individuals may also place their savings more directly, by purchasing newly issued shares of corporate stock, bonds, and similar financial instruments or by buying instruments already issued from others, who may use the funds they receive to buy new issues. Individuals may also contribute to pension funds or purchase mutual funds and the like. Such funds also typically buy financial instruments.

To a large extent, the process of saving and investment represents a diversion of productive resources from the output of goods and services for current consumption to the creation of up-to-date, technologically advanced capital goods that can expand production and increase the productivity of human and natural resources. Workers using modern logging and transportation equipment, for example, can cut more trees and deliver more lumber than they can produce with hand saws and horse-drawn wagons. A secretary using a word processor can produce more letters than one using a typewriter, who, in turn, can produce more than one using a quill pen. A pilot can fly more passengers more miles faster with a jet plane than with a propeller-driven aircraft, and so on.

Capital goods often cost a great deal of money and last for a long time. Investing in capital goods, therefore, not only carries the opportunity cost of what else the money could be used for, but usually also involves taking a risk. For example, if still newer technology emerges quickly or if market conditions change, a machine may become obsolete before it has generated enough income to pay back those who invested in it. Businesses that invest in capital goods, therefore, must anticipate that they will receive enough income to make it worthwhile to take on the possible risks.

Investment in Human Capital

Investment in human capital occurs when the health, education, and training of the population are increased through the efforts of individuals, businesses, or governments. Good health, education, and relevant training all contribute to workers' productivity. However, investment in human capital, like investment in capital goods, also involves an element of risk. Individuals who invest time or money in more education and training usually become more productive, get better jobs, increase their incomes, and find greater satisfaction in their work and leisure, but these benefits are not guaranteed. Investing in education and training also carries opportunity costs because it employs resources that could be put to other uses. The cost of a college education, for example, includes not only direct payments for tuition, books, and fees, but also the loss of the output and income that could have become available if the student had been working full time instead of going to school.

Technological Change

Technological change can be defined as the incorporation into production of new knowledge and processes that result in (1) a different organization of the production process, (2) improvements or the introduction of innovations in capital goods, or (3) modifications of the goods and services currently being produced or the invention and introduction of new goods and services. The word processor and the jet plane are but two relatively recent and striking examples of technological change. Such improvements depend heavily on basic and applied research, assessments of the probable success of a new technology, gifted and knowledgeable experimenters and inventors, and the amount of saving available to underwrite the costs of developing and introducing new technology.

Effects of Government

In addition to the effects on productivity of individual and business decisions about saving and investing, government actions and policies also play a role. Historically, governments have encouraged increases in productivity by actions such as providing transportation facilities, providing education, and underwriting or performing agricultural research. Governments also establish a framework of law and political stability that makes long-term private commitments feasible and profitable. However, governments can hamper productivity increases if their laws or regulations serve particular groups rather than the general welfare, if their tax policies adversely affect saving and investment, and if they enact price regulations and trade restrictions that prevent resources from moving to their most productive uses. We discuss the role of government in the U.S. economy in more detail later.

4. ECONOMIC SYSTEMS

People and societies organize economic life to deal with the basic problems raised by scarcity and opportunity cost through **economic systems.** An economic system can be described as the collection of institutions, laws, activities, controlling values, and human motivations that collectively provide a framework for economic decision-making.

In a world of scarcity and opportunity cost, all societies must decide the basic economic questions of what goods and services to produce, which ones to forgo or postpone, and when and how to transfer productive resources from one use to another. Decisions must also be made about how much effort to devote to increasing total output as well as how to divide the total output of a society among its members—that is, how to distribute the total real income an economic system generates. These decisions all hinge on how economic resources are allocated.

There are three basic approaches to economic decisions about resource allocation. One is based on **tradition**—that is, people generally repeat the decisions made at an earlier time or by an earlier generation. A second is based on **command**—that is, decisions are made largely by an authority, such as a feudal lord or a government planning agency. Authority in a command economy can be exercised in a democratic fashion or it can be imposed from above by people whose power is not subject to the outcome of free elections. The third is based on **market prices.***

A market economy is a system of decentralized decision-making in which individuals and business firms, in their various capacities as consumers, producers, workers, savers, and investors, participate in the market through decisions that are reflected in the supply and demand for various goods and services. The market "adds up" these millions of decisions about supply and demand and forges out of them an interrelated network of market prices that reflect the preferences of all the participants. Market prices—and the changes in them—act as signals to producers, telling them what buyers want. Market prices also act as rationing devices by allocating productive resources and finished goods and services among members of society according to what buyers are willing and able to pay.

No real-world economy is a pure form of a traditional, a command, or a decentralized market economy. Every existing economy uses a different "mix" of allocating mechanisms to answer the basic economic questions, and each has somewhat different institutions, controlling values, and motivating forces at work which affect the operation of the economy. The element of tradition is, for example, most evident in the rural areas of the less developed countries of Asia and Africa. The element of command is most evident in the Soviet Union and other centrally planned economies. Decentralized or market decision-making is most evident in the United States, Australia, Canada, and Western Europe; but even among these countries, considerable diversity exists in the amount of government planning and in the variety of economic institutions.

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*We choose not to use terms such as "feudalism," "socialism," "communism", or "capitalism" to describe economic systems because they mean different things to different people, and they carry emotional overtones in the minds of many.

Understanding how economic decisions are made in a particular economy requires careful attention to questions such as the following:

—What is the actual "mix" of allocating mechanisms? That is, how many economic decisions are tradition oriented? How many are made by central command? How many are left to decentralized market forces?

—What are the most important economic institutions of the society and what role do they play in shaping economic decisions?

—What are the controlling values and motivating forces that condition economic behavior in the society?

—What, if any, significant changes appear to be taking place in the economic system?

Finally, it should be noted that people of all societies, regardless of the type of economic system, engage in certain basic economic activities. These include **producing, exchanging,** and **consuming** goods and services, as well as **saving** and **investing** so that capital goods and human capital can be accumulated to increase output and productivity. The distinguishing characteristics of an economic system thus are not the economic activities that are carried on but the kinds of economic institutions that exist and the way in which they influence decision-making.

5. ECONOMIC INSTITUTIONS AND INCENTIVES

Economic institutions are of several kinds. In addition to households and families, there are formal organizations, such as corporations, government agencies, banks, labor unions, and cooperatives. There are also customary ways of doing things, such as the use of money, collective bargaining, the dominance of men or women in certain occupations, and the observance of various holidays. There are also different controlling values and beliefs that pervade different economic systems. (Some beliefs may be common to most systems.)

In the United States, the household is the typical unit of consumption. Households differ in size, composition, and the manner in which members make decisions. The private firm (which can take various legal forms, such as an individual proprietorship, partnership, or corporation) is the typical unit of production. These firms may participate in trade associations or employer organizations in seeking to promote their own industry interests and to influence legislatures and government administrative agencies. Workers may organize into labor unions to further their interests through collective bargaining and political action. Government agencies play an important regulatory role in the economy, and some governmental enterprises (such as the Tennessee Valley Authority, the postal system, and municipal bus lines) produce goods or provide services directly. Other economic systems use different institutions. The Soviet Union, for example, carries on agricultural production through both state farms and collective farms or communes. In Sweden and Finland, cooperatives are more important than in most other countries. By law, worker representatives serve on the boards of directors of large West German corporations. Banks exist in almost every country, and virtually all societies—except for some hunting and gathering tribes—use some form of money as a medium of exchange and a measure of value.

All societies have some system of property ownership. In the United States, for example, private ownership of property is emphasized. In others, such as China, government ownership is the rule except for some small enterprises and personal or household goods. Government planning is highly centralized and comprehensive in the Soviet Union, more decentralized in Yugoslavia, and suggestive—"indicative"—in France. Some institutions exist only in certain types of economic systems, for example, collective bargaining about wages and working conditions takes place only in democratic industrial countries.

Cultural traditions of societies also influence the pattern of economic behavior. Examples range from the much-discussed "work ethic" of the Japanese, to the nonmaterialist philosophy of certain Buddhist countries, and to the seasonal patterns of retail sales that are evident in most countries due to the occurrence of religious or secular holidays.

Incentives are factors that motivate and influence human behavior. Economic incentives work by offering larger or smaller claims to goods and services in order to influence people's behavior, usually through financial rewards and penalties. Not all human behavior is motivated by economic incentives. Sometimes people turn down higher-paying jobs because of unwillingness to move to a different geographic area. Women sometimes leave the labor force for considerable periods in order to raise children despite the financial sacrifices involved. Because people want to preserve existing arrangements, or perhaps do someone a favor, business and government contracts are not always awarded to the lowest bidder. The most productive job applicants are not always hired, because employers may want either to preserve or to change customary employment patterns. But when all is said and done, economic incentives, the desire to achieve financial or material gain and to avoid financial or material loss, are powerful motivating forces.

The pursuit of economic self-interest is the main motivating force in market economies. Consumers seek to allocate their incomes to obtain the greatest amount of satisfaction. Producers seek to maximize their profits, and this impels them to use the most efficient combinations of productive resources to produce the goods and services that consumers want to buy. Workers seek to sell their labor for the best return in money wages and working conditions. Savers seek high interest rates to earn the most income on their funds. In all these instances, economic self-interest is the motivation.

Profits are a particularly important incentive in a market economy. **Profit** is what remains after all costs of production have been deducted from the revenue derived from the sale of goods or services. It is the desire for profit that persuades entrepreneurs to establish new businesses, expand existing ones, and change the kinds of goods and services produced (e.g., from big automobiles to small ones or vice versa). The profit motive stimulates owners and managers to make businesses more efficient, to introduce cost-cutting technologies in production, and to compete more vigorously with other businesses for consumers' dollars. Previously earned profits provide an important source of funds for new investment, and thereby stimulate economic growth. Similarly, losses (negative profits) are a signal to move resources elsewhere. Thus, in a competitive market economy, profits and losses spur efficiency, growth, and change. In situations where competition is lacking, however, the profit motive can lead to restrictions of output. (See the discussion on market failures—concept 11—below.)

In other economic systems, nonmarket incentives or forces are sometimes more evident. In command economies, for example, the authorities emphasize the contribution individuals and groups can make to the welfare of the state rather than to their own personal interests. In some earlier societies, a major motivation was to glorify the ruler (e.g., building pyramids in Pharoah's Egypt) or a superior being (e.g., building cathedrals in medieval Europe). More recently, in Hitler's Germany, "race" determined the extent to which individuals could participate in the economy. Whatever the major incentives or forces may be, they influence the structure of an economic system and how it functions.

Because economic institutions and economic incentives play such a central role in every economic system, an understanding of how they work is essential to understanding the U.S. economy. Not all economic decisions in that economy are left to individuals. As we have indicated, individuals and businesses form themselves into organized self-interest groups and use group pressure, both in the market and through political processes, to achieve their goals. Since some economic units or groups possess greater power than others, they can have greater influence on changes in the institutional framework within which economic activity occurs.

6. EXCHANGE, MONEY, AND INTERDEPENDENCE

As we have indicated, individuals, groups, regions, and countries often specialize in the production of particular goods and in the performance of particular services. This leads to the output of more goods or services than the producers themselves wish to consume. In such situations, producers **exchange** their surpluses for other goods and services produced by people located elsewhere, and everyone is better off as a result. Indeed, the principle of voluntary exchange is based on the fact that *both* sides expect to gain from trade. If they did not, they would not trade.

The simplest form of exchange is **barter,** or the direct trading of goods or services between people. Since barter is usually inconvenient, **money** was developed to facilitate exchange. A wide variety of items has been used as money throughout history, and almost anything can serve as money so long as people are willing to accept it in exchange for goods and services. Money need *not* have any intrinsic value to serve as a medium of exchange. It is peoples' willingness to accept it in payment that gives money its value in the exchange process. In the United States today, people are willing to accept both currency (metal coins and paper bills) and checks in exchange for goods and services. Until recently, commercial banks were the only financial institutions permitted to establish checking accounts, and the standard definition of the money supply in the United States used to be that it consisted of currency in circulation and checking deposits at commercial banks. Money held in these forms did not earn interest, and it was convenient to separate "money" from other interest-paying assets such as savings accounts and other forms of so-called time deposits.

Our financial system is constantly evolving, however, and in the 1970s savings and loan associations, mutual savings banks, credit unions, and similar "thrift institutions" began offering accounts with names like "automatic transfer savings" (ATS), "negotiable orders of withdrawal" (NOW), and "share drafts." All these accounts consisted of interest-paying deposits against which the depositor could write checks.

Beginning in 1982, U.S. banking regulations also allowed commercial banks to pay interest on checkable deposits. Indeed, so many changes have occurred in the U.S. financial system in recent years that several differently defined measures of the money supply are now published regularly by the Federal Reserve System, which we discuss in more detail later.

Specialization and exchange reduce self-sufficiency, and thus they increase interdependence. **Interdependence** means that decisions or events in one part of the world or in one sector of the economy affect decisions and events in other parts of the world and other sectors of the economy. Bad weather in Eastern Europe can affect sugar prices in the United States, and sugar prices can affect the sales of candy, soft drinks, and even the sales of machinery used to harvest sugar beets and sugar cane in various parts of the world. Wage increases in the steel industry can affect retail sales in Pittsburgh, the cost of producing automobiles in Detroit, and economic conditions in many other industries and places as well.

Microeconomic Concepts

Microeconomics is the study of the behavior of individual households, firms, and markets, of how prices and outputs are determined in those markets, and of how the price mechanism allocates resources and distributes income. To understand the kinds and amounts of goods and services an economy will produce requires that we know how the prices of goods and services are determined, how these prices determine the pattern of production, and how this pattern is influenced both by the structure of markets and by government actions.

7. MARKETS AND PRICES

Markets are institutional arrangements that enable buyers and sellers to exchange goods and services. A market does not need to have a single physical location. Some markets, such as the New York Stock Exchange or the Chicago Board of Trade, do have a physical location that people can see or visit. Other markets, such as the market for high school teachers or the market for new homes, however, do not have a specific location. Such markets function through advertisements, letters, telephone calls, computer networks, personal relationships, and face-to-face discussions in various places. A "market" can be said to exist so long as there are some arrangements that enable potential buyers and sellers to communicate about the exchange of goods and services.

Prices are the amounts of money that people pay in exchange for a unit of a particular good or service, e.g., $2.00 per pound, $12.00 per hour, $0.50 per quart, $6.00 per dozen, etc. **Relative prices** refer to one price compared to another, that is, to the ratio between them. In an actual market, the collection of relative prices constitutes the **price structure** of that market. The collection of price relationships in an entire economy constitutes its total price structure.

Doubling all prices, or cutting all prices in half, for example, would not change the price structure (or the relative price ratios) in a market. If the price of apples rises from $1.00 per dozen to $2.00 per dozen, and the price of oranges rises from $2.00 per dozen to $4.00 per dozen, the apple-to-orange price ratio is still 1 to 2 even though the **absolute**

prices of both items have changed. A change in relative prices occurs only when the **exchange ratio** between items is altered. If the price of apples rises from $1.00 per dozen to $2.00 per dozen, and the price of oranges remains the same, there will be a change in the apple-to-orange price ratio, and this change in relative prices will cause people to want to buy fewer apples and more oranges than before these relative prices changed.

By comparing the relative prices of various products, consumers can determine which particular combination of goods and services would be most advantageous for them to buy. By comparing the relative prices of various resources as well as the relative prices of various goods and services, business firms can determine which combination of resources they can most advantageously employ to produce particular goods and services. By comparing relative prices in different markets, owners of resources can determine where they can most advantageously sell their resources or the services their resources can supply.

Relative prices and how they affect people's decisions are the means by which a market system provides answers to the basic economic questions: What goods and services will be produced? How will they be produced? Who will get them?

What to produce? The goods and services that are the most profitable.

How to produce them? At the lowest cost possible.

Who will get them? Whoever is willing and able to pay the market price.

It is important to understand how a system of interdependent market prices can, without central planning or direct control over the decisions of individual producers or consumers, enable countless goods and services to be produced and delivered in the quantities desired, at the desired places, and at the desired times. This occurs because relative prices perform three principal functions in a market system. These are: (1) an **information** function, (2) an **incentive** function, and (3) a **rationing** function.

Information

Relative prices and the ratios among them provide the essential information consumers, producers, and resource owners in a market system need in order to decide whether, what, and how much to buy. To grasp fully the importance of the information function provided by prices, imagine shopping in a supermarket in which no prices are shown for the items on the shelves. Or imagine choosing between two job opportunities without knowing the salaries offered by each. Or imagine trying to decide whether to hire a painter to paint your house or to do it yourself when you lack information about how much painters charge or about the prices of paint, brushes, and other materials.

Incentives

Changes in relative price ratios create incentives for resources to move or be reallocated in a market economy. An increase in the price of soybeans relative to the price of corn encourages farmers to plant more soybeans and less corn. A decline in the salaries of lawyers relative to those of accountants is an incentive for fewer people to go into law and more into accounting. Increased profits attract resources in free markets, while increased losses produce opposite effects. Profits are the green lights of economic life; losses are the red lights. Just as a well-functioning traffic control system requires both green lights and red lights, so a well-functioning market system requires both profits and losses to help channel its scarce resources into their most valuable uses.

Rationing

The higher the price of anything, other things equal, the less of it people will be willing and able to buy. Conversely, the lower the price, the more people will be willing and able to buy. Prices are the market's way of rationing limited resources, goods, and services to those most willing and able to pay for them. If the owner of a lot on a downtown street corner can receive a higher rent by leasing the land for an office building rather than for a parking garage or a warehouse, the land will be used for an office building, and the parking garage and the warehouse will be "rationed out" of this location. If 50,000 people would like to see a rock concert scheduled for a hall that can accommodate only 5,000 people, the price of tickets can be increased until only 5,000 are willing to pay that price; the other 45,000 people will be "rationed out" by the high price.

The Circular Flow of Resources, Goods, Services, and Money Payments

One way of illustrating the overall operation of a market economy is through a circular flow diagram such as the one in Exhibit 4. This exhibit presents a highly simplified overview of how a market economy operates. Owners of resources (families and individuals*) supply the services of their land, labor, and capital to business firms in exchange for money income payments in the form of wages, salaries, rents, interest, and profits. Owners of the resources in turn use these income payments to purchase the finished goods and services supplied by the business firms. Business firms then use the proceeds from these sales to pay the resource owners for the services the firms receive by employing the resources. This is how the circular flow of resources, goods and services, and money income payments is established and maintained.

Payments in the lower loop (sometimes called the factor market) appear as income to the resource owners who sell productive services, but these same payments appear as costs to the business firms that buy productive services. Likewise, payments in the upper loop (sometimes called the product market) appear as costs to the resource owners who buy goods and services, but these same payments appear as income to the business firms that sell goods and services.

An important point to emphasize is that all of the money payments shown in Exhibit 4 are determined by an interdependent set of market prices. In a system of interdependent market prices, every price depends to some extent on every other price. The prices resource owners are willing to pay for finished goods and services depend on the prices (income) they receive for the use of their resources. The prices of resources, in turn, depend on how much business firms are willing to pay for the services the resources provide. How much businesses are

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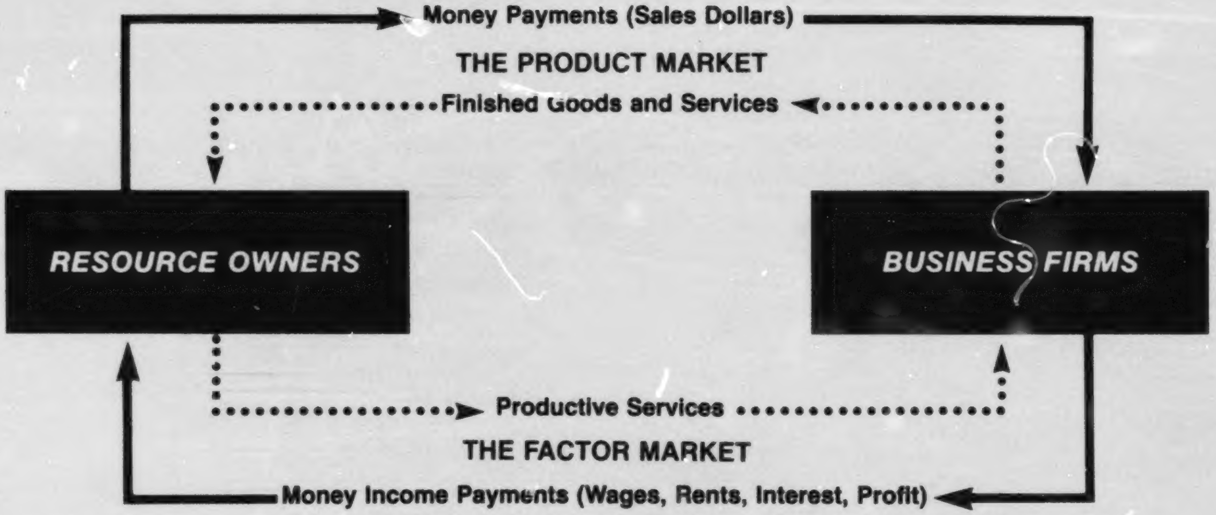
*Corporations are also owners of resources, but the owners of a corporation—that is, its stockholders—are families and individuals or their representatives.

EXHIBIT 4

The Circular Flow of Resources, Goods, Services, and Money Payments


Money Payments (Sales Dollars)
THE PRODUCT MARKET
Finished Goods and Services
RESOURCE OWNERS
BUSINESS FIRMS
Productive Services
THE FACTOR MARKET
Money Income Payments (Wages, Rents, Interest, Profit)

willing to pay for resources depends on the prices they receive for the finished goods and services they sell, but the prices business firms receive depend on what resource owners are willing to pay for goods and services. And so, round and round, the process continues.

Both resource owners and business firms would like to receive higher prices for what they sell and to pay lower prices for what they buy, but this is not easy to do when the prices buyers pay are also the prices sellers receive. As explained in greater detail in the next section, a market system relies on the interaction between sellers (supply) and buyers (demand) to reconcile these conflicting objectives and to establish prices in particular markets. Competition among sellers gives buyers a choice in deciding from whom (if anyone) to buy, and competition among buyers gives sellers a choice in deciding to whom (if anyone) to sell.

8. SUPPLY AND DEMAND

Supply is a relationship between quantity and price. **Supply** is defined as the different quantities of a resource, good, or service that will be offered for sale at various possible prices during a specific time period. Generally, the higher the price of something, the more of it will be offered for sale—and vice versa.

Demand is, too, a relationship between quantity and price. **Demand** is defined as the different quantities of a resource, good, or service that will be purchased at various possible prices during a specific time period. Generally, the lower the price of something, the more of it will be purchased—and vice versa.

In competitive markets, supply and demand constitute the sum of many individual decisions to sell and to buy. The interaction of supply and demand determines the prices and the quantities that will "clear" competitive markets. This is illustrated in Exhibit 5, where hypothetical data are provided for a hypothetical product. The data in the exhibit are presented in tabular form as supply and demand "schedules." Columns 1 and 2 of the table constitute the supply schedule, while columns 2 and 3 constitute the demand schedule.

EXHIBIT 5

Hypothetical Supply and Demand Schedules for a Hypothetical Product

(1) Quantity Supplied by Producers (millions of units)	(2) Price ($ per unit)	(3) Quantity Demanded by Consumers (millions of units)
70	$7.00	10
60	6.00	20
50	5.00	30
40	4.00	40
30	3.00	50
20	2.00	60
10	1.00	70

Exhibit 5 shows that the market-clearing *price* for this hypothetical product is $4.00 per unit. At any price below $4.00 per unit, the quantity demanded exceeds the quantity supplied, and competition among buyers will bid the price up to $4.00. At any price above $4.00 per unit, the quantity supplied exceeds the quantity demanded, and competition among sellers will cause the price to fall to $4.00. Only at a price of $4.00 a unit will the market "clear," with both the quantity supplied and the quantity demanded equal to each other at the same price.

The schedules presented in Exhibit 5 can also be used to show that 40 million units is a market-clearing *quantity*. Only at a quantity of 40 million units will the market "clear," with both the price sellers are willing to accept and the price buyers are willing to pay equal to each other at the same quantity.

The market-clearing price of $4.00 and the market-clearing quantity of 40 million units shown in Exhibit 5 will persist so long as *other things remain constant*. If there is a change in supply, or if there is a change in demand—these changes are often described as "shifts" in supply or demand—there will be a change in the market-clearing price and the market-clearing quantity. An increase in supply, for example, would mean that sellers are willing to sell larger quantities at each and every price shown in Exhibit 5. This would result in a lower market-clearing price and a larger market-clearing quantity. A decrease in supply would have the opposite effect. Similarly, an increase in demand would mean that buyers are willing to buy larger quantities at each and every price shown in Exhibit 5. This would result in a higher market-clearing price and a larger market-clearing quantity. A decrease in demand would have the opposite effect. Furthermore, as mentioned earlier, changes in one market will affect relative price ratios and are thus likely to cause changes in other markets as well. A higher market-clearing price and a lower market-clearing quantity for coffee, for example, will tend to increase the demand for tea and to decrease the demand for the paper filters used in coffee makers.

The forces of supply and demand work most effectively in markets with large number of sellers and buyers, each with reasonably accurate information, who are competing to sell or buy a relatively homogeneous product. In markets that do not possess all of these characteristics, the forces of supply and demand are modified by the structures that prevail in those markets.

9. COMPETITION AND MARKET STRUCTURE

The term **market structure** refers to the extent to which competition prevails in particular markets. The degree of **competition** is largely determined by the number of buyers and sellers participating in the market, the availability and accessibility of accurate information, the possibility of collusion among buyers and among sellers, the nature of the product, and the ease with which firms can enter and leave the market. The structure of markets may also be affected by various laws and government regulations, which we discuss later. In turn, market structure affects the level of prices, the amounts purchased, and the rate of profit earned by firms.

Some markets are highly competitive. They contain many producers or sellers, none of whom can independently dominate or affect the market price appreciably; the possibility of effective collusion is small; accurate information is easily accessible; the products sold by different producers are homogeneous or so similar that it is difficult to distinguish the product of one seller from that of another; and firms can enter the industry without difficulty. Many farm products like wheat and corn are examples. Markets that are less competitive are dominated by a smaller number of producers or sellers; individual sellers may be able to affect and sometimes control prices; the possibility of effective collusion may exist; accurate information is less easily accessible; the product of one seller can more frequently be distinguished from that of another; and entry into the industry is usually somewhat difficult. The U.S. auto industry is an example.

The spectrum of market structures runs from highly competitive markets to those that contain only a single seller (called a **monopoly**) or a single buyer (called a **monopsony**). Unregulated monopolies tend to sell at higher prices and to produce smaller quantities than would a set of competitive suppliers with the same cost structure. Unregulated monopsonies tend to buy at lower prices and to purchase smaller quantities than would a set of competitive buyers.

Economists distinguish still other types of market structures that are not highly competitive. Firms in a market structure with few sellers are called **oligopolies.** Firms in a market structure with few buyers are called **oligopsonies.** The term **monopolistic competition** is used to refer to a market structure that may have a good many firms selling similar products, but the products can be differentiated from each other by the use of brand names or advertising and marketing strategies or by making relatively minor variations in the product.

Collusion occurs when independent producers agree to coordinate their decisions in a manner that restricts competition. When collusion takes the form of an explicit agreement to fix prices and share markets among a group of producers that furnishes a large share of a particular product, the group is called a **cartel.**

We do not wish to encourage the memorization of terms for their own sake, nor do we feel that it is necessary to introduce precollege students to the detailed analyses used by economists to distinguish between various market structures. The important thing for these students to realize is that the prices of goods and services as well as the quantities offered, which play such an important role in a market economy, are affected by the competitive structure of various markets. When confronted by particular market situations, students should be encouraged to try to identify the type of market structure that exists as reflected by characteristics such as the number of sellers (or buyers), possible barriers to entry into the industry, the accessibility of information, the possibility of collusive action, the degree of product differentiation, the role of government in the market, and the level of profits earned.

10. INCOME DISTRIBUTION

In a market economy, people's incomes depend largely on the value of goods or services (including labor) they are able to sell in the marketplace. People who own larger amounts of scarce resources or possess rare talents that are in great demand receive higher incomes than those without such resources or talents. As explained earlier, **wages and salaries** are payments for the services of labor; **rent** is payment for the use of someone's land or property; **interest** is payment for the use of borrowed money; and **profit** is the return to business enterprise that results when the value of sales exceeds the cost of the goods or services sold.

The division of an economy's total income into wages and salaries, rent, interest, and profit is called the **functional distribution of income,** since it shows the breakdown of income received by the individuals and businesses based on the type of resources provided to the productive process. A functional distribution of income, of course, does not tell us how many people receive each type of income, nor does it tell us how many people receive incomes from more than one source. For information on the **personal distribution of income,** we typically classify different population groups by the number of them receiving different amounts of income, including transfer payments.

Transfer payments, which have grown rapidly in recent years, consist mostly of payments by government for which the recipients do not currently perform productive services, although in some cases these payments are related to productive activity that was performed in the past. The most important transfer payments in the United States today are Social Security benefits, government employee retirement benefits, unemployment compensation, and public assistance such as aid to the elderly, aid to families with dependent children, veterans benefits, and food stamps.

Exhibit 6 shows the distribution of personal income by function and by income level—the latter is given separately for families and for unrelated individuals, i.e., those living alone or with others to whom they are not related—in the United States in 1982.

Many forces shape the personal distribution of income. Various farm, business, labor, and other groups such as the poor, veterans,

EXHIBIT 6

Sources and Distribution of Personal Income in the United States, 1982

Sources of Personal Income (Functional Distribution)

Type of Income	Amount of Income (billions of $)	Percent of Total Personal Income
Wages, salaries, and other labor income less contributions for social insurance	$1,612.7	62.5%
Personal rental income	49.9	1.9
Personal interest income	366.2	14.2
Personal dividend income	66.4	2.6
Net income of unincorporated businesses (including farms)	108.9	4.2
Transfer payments	374.5	14.5
Total	$2,578.6	100.0%[a]

Distribution of Personal Income

Money Income Level	All Families		Unrelated Individuals	
	Numbers in Millions	Percent of Total	Numbers in Millions	Percent of Total
Under $4,999	3.7	6.0%	6.7	24.0%
$5,000–$9,999	6.5	10.6	7.3	26.2
10,000–19,999	15.1	24.6	8.3	29.7
20,000–29,999	14.1	23.0	3.6	12.9
30,000–39,999	9.7	15.8	1.1	3.9
40,000–49,999	5.6	9.1	0.4	1.4
50,000–59,999	2.9	4.7	0.2	0.7
60,000 and up	3.8	6.2	0.3	1.1
Total	61.4	100.0%	27.9	100.0%[a]

SOURCE: Figures for sources of personal income are from Council of Economic Advisers, *Economic Indicators*, July 1983, p. 5; those for distribution of personal income are from Bureau of the Census, *Current Population Reports*, Series P-60, No. 140, July 1983, p. 11. Personal dividend income excludes the parts of corporate profits paid as corporate income tax or retained for use in corporate business.

[a] Figures do not sum to 100.0 percent because of rounding.

and the elderly, continuously seek to expand their share of total income. Inherited wealth and practices and customs such as racial and gender discrimination also help to shape the distribution of income. There is controversy about the distribution of income and the extent, if any, to which it should be redistributed from its original recipients to others who are less well off. Decisions about income distribution are made through the political process as well as by the operations of the market economy.

11. MARKET FAILURES

Markets work best when they are reasonably competitive, when buyers and sellers have access to sufficient reliable information, when resources are relatively mobile and free to move from one use to another in response to changing conditions, and when market prices reflect the full costs and benefits incurred in producing and exchanging goods and services. Market "failures" occur when there are significant deviations from these conditions. The main forms of market failure are inadequate competition, lack of access to reliable information, resource immobility, externalities, and the need for public goods (i.e., goods or services the government supplies because the market either does not supply them or supplies them in insufficient amounts). We discuss each of these in turn.

Inadequate Competition

A market system relies on competition to give both buyers and sellers a choice in deciding with whom to exchange and on what terms to make such exchanges. Without competition there is no guarantee that scarce resources will be allocated to their most productive uses. Inadequate competition is, therefore, a serious problem in a market system. Yet maintaining competition is not always easy. In markets in which there are few buyers or few sellers, the buyers or the sellers may more easily collude to fix the prices at which they are willing to buy or sell. Even when a large number of sellers exists, a form of price fixing may occur, especially if the government helps, as it does in important segments of agriculture. Competition in some markets may be lessened through policies of price leadership exercised by one or a few firms or by "conscious parallelism" in price policy. In still other markets, in which it may not be efficient to have large numbers of producers of a particular good or service, we find **natural monopolies** such as various local water and gas companies.

Inadequate Knowledge

Inadequate knowledge of market conditions on the part of consumers, workers, and business managers can adversely affect the decisions they make and the efficiency with which the market mechanism allocates resources, goods, and services. Consumers, for example, may not be well-informed about the quality of products or of alternative products available. Unemployed workers may not know of job opportunities in unfamiliar labor markets. Business managers may not be aware of changing demographic patterns or changing economic conditions. Yet in many of these cases it may be very difficult or extremely costly for individuals to seek out reliable information on their own. In such situations, public provision of information can lead to increased efficiency so long as the additional benefits to consumers, workers, or business managers exceed the government's additional costs or trouble of acquiring and disseminating the information.

Resource Immobility

Another condition that can impair the functioning of the market mechanism is resource immobility. Workers, for example, may not be able to move from declining to expanding industries because they lack the specialized skills required or the money needed to relocate themselves. Business firms may have investment funds tied up in obsolete equipment and machinery and be unable to take advantage of new investment opportunities until the old equipment is paid off.

Externalities

Externalities are the positive or negative side effects that result when the production or consumption of a good or service affects the welfare of people who are not the parties directly involved in a market exchange. A positive externality in consumption, for example, may result from the acquisition of additional education by an individual; when put to proper use, additional education increases the productivity of that individual, and society as a whole thereby benefits. A negative externality in consumption occurs when cigarette smoking by one individual has detrimental effects on nonsmokers. A positive externality in production occurs, for example, when a dam constructed to generate electric power provides flood control for downstream residents and/or creates an attractive lake for scenic and recreational purposes. A negative externality in production occurs when a factory discharges smoke or other pollutants into the air or into rivers and streams.

Positive externalities are sometimes called "third-party benefits," and negative externalities are sometimes called "third-party costs." Since external benefits and external costs are not reflected in the market prices paid by buyers and received by sellers, an unregulated market system underproduces goods and services that yield external benefits and overproduces goods and services that impose external costs.

Public Goods

Most goods and services produced and exchanged in the market are "private goods," which producers can withhold from would-be consumers who refuse to pay (that is, people who do not buy are excluded), and whose consumption by one person or family makes them unavailable to others (that is, consumption is not shared). **Public goods** are those the government supplies in situations involving nonexclusion and/or shared consumption.

A "pure" public good is a product or service producers cannot withhold from consumers who refuse to pay (**nonexclusion**), and the consumption of the product or service by one person does not reduce its usefulness to others (**shared consumption**). National defense, for example, cannot be provided exclusively to those who are willing to pay for it nor can it be withheld from those who are not able or not willing to pay. Likewise, in some situations, one person's use or consumption of a good or service does not prevent its concurrent use by others. The illumination that one person receives from a street light, for example, is not diminished by others' use of the same illumination.

Goods such as national defense, street lighting, and flood control are not adequately provided by the market system because private businesses will not produce things that people will not pay for, and because individual consumers are reluctant to pay for goods and services that benefit nonpayers in the same way as those who pay.

Public Policy Responses to Market Failure

Governments have adopted various policies to deal with the several types of market failures described above. Antitrust laws and public regulatory agencies attempt to deal with inadequate competition. Public provision of information and statistical data when private provision would be prohibitively expensive can remedy inadequate knowledge; consumer protection laws can have a similar effect. Relocation allowances, favorable tax treatment, retraining programs, and the like, can lessen resource immobility. Taxation discourages the production of goods and services that impose external costs, and subsidies encourage the production of goods and services that provide external benefits.

Public policies aimed at correcting market failures do not always work out as intended, however, and under certain circumstances efforts to correct market failures can themselves become sources of inefficiency. When this happens, "government failures" may be said to occur. Government failures can occur when special-interest groups exert undue influence on the political process and secure advantages for themselves that they cannot obtain in the marketplace. Government agencies often develop an internal dynamic of their own as they compete for additional staff and influence. Since they are not subject to the tests of monetary losses and bankruptcy that tend to eliminate inefficient operations in private-sector markets, inefficient government agencies may remain intact indefinitely. Managers in the public sector seldom gain from saving the taxpayers' money. If an agency fails to spend all of one year's appropriation, its case for a larger budget or even the same budget next year may be weakened. Finally, there is an element of compulsion in the public sector that does not exist in competitive markets. If the majority—either directly or through the legislative process—decides to pursue a particular policy, the minority must acquiesce and help pay for its costs, even if the minority strongly disagrees. In a democracy, however, the minority can reverse the policy if it is able to convince enough legislators or if the minority becomes the majority.

12. THE ROLE OF GOVERNMENT

All societies must establish some framework of law and order to safeguard their existence. A market economy could not function without some protection of property rights and enforcement of contracts. But, once this general point is made, there is room for debate about which laws and rules are necessary or desirable. In a market economy business firms and resource owners are encouraged to compete vigorously in pursuit of their own self-interests. But what if they do not compete fairly? What if they agree to fix prices and restrict output? What if they lie or cheat? What if they sell spoiled meat or impure and therefore dangerous drugs without informing buyers?

Some argue that in the long run the market itself punishes such practices. The liars and cheaters will find it increasingly difficult to find customers. As their tactics are found out and this information gets around, fewer people will do business with them, and they will be punished in the currency of the marketplace—by monetary losses. While such punishment may eventually take care of those who violate the principles of fair competition, this does little to redress the harm done to the victims of those practices. Few people take comfort in learning that a particular drug which impaired their health is losing sales or that news of illness caused by spoiled meat contributes to the economic demise of an unscrupulous competitor.

All but the advocates of a completely unrestricted market system admit that some ground rules are necessary to keep competition within acceptable limits. Yet, when it comes to a specific issue, the matter becomes one of intense controversy. Should there be standards for weights and measures? Laws to forbid child labor? Health and safety regulations? Farm price supports? Zoning regulations? Minimum wage laws? Should the government enforce truth in advertising? Certify the purity of food and drugs?

Beyond establishing and enforcing certain "rules of the game" in economic life, government activities in the U.S. economy today can be classified into several categories: preserving and fostering competition (antitrust laws), regulating natural monopolies, providing information and services to enable the market to work better, regulating externalities, providing certain public goods, offering some measure of economic security and income redistribution to individuals, assuring a sound monetary system, and promoting overall economic stability and growth. All of these activities involve some element of controversy; all entail at least some expenditures; and, as mentioned in the previous section, all contain potentials for government failures that somewhat parallel private-market failures.

Taxation

Goods and services provided by governments (federal, state, and local) are paid for by taxes or by borrowing from the public. Taxes are mandatory payments to governments. **Proportional taxes** take the same percentage of income from people in all income groups. **Progressive taxes** take a larger percentage of income from higher-income groups than from lower-income ones; the federal income tax in the United States is an example of a progressive tax. **Regressive taxes** take a larger percentage of income from lower-income groups than from higher-income ones. Sales taxes and most excise taxes are examples of regressive taxes, since low-income groups tend to spend a larger percentage of their income on taxed items than do high-income groups; the latter tend to save a larger proportion of their incomes.

Governments in the Circular Flow of Resources, Goods, Services, and Money Payments

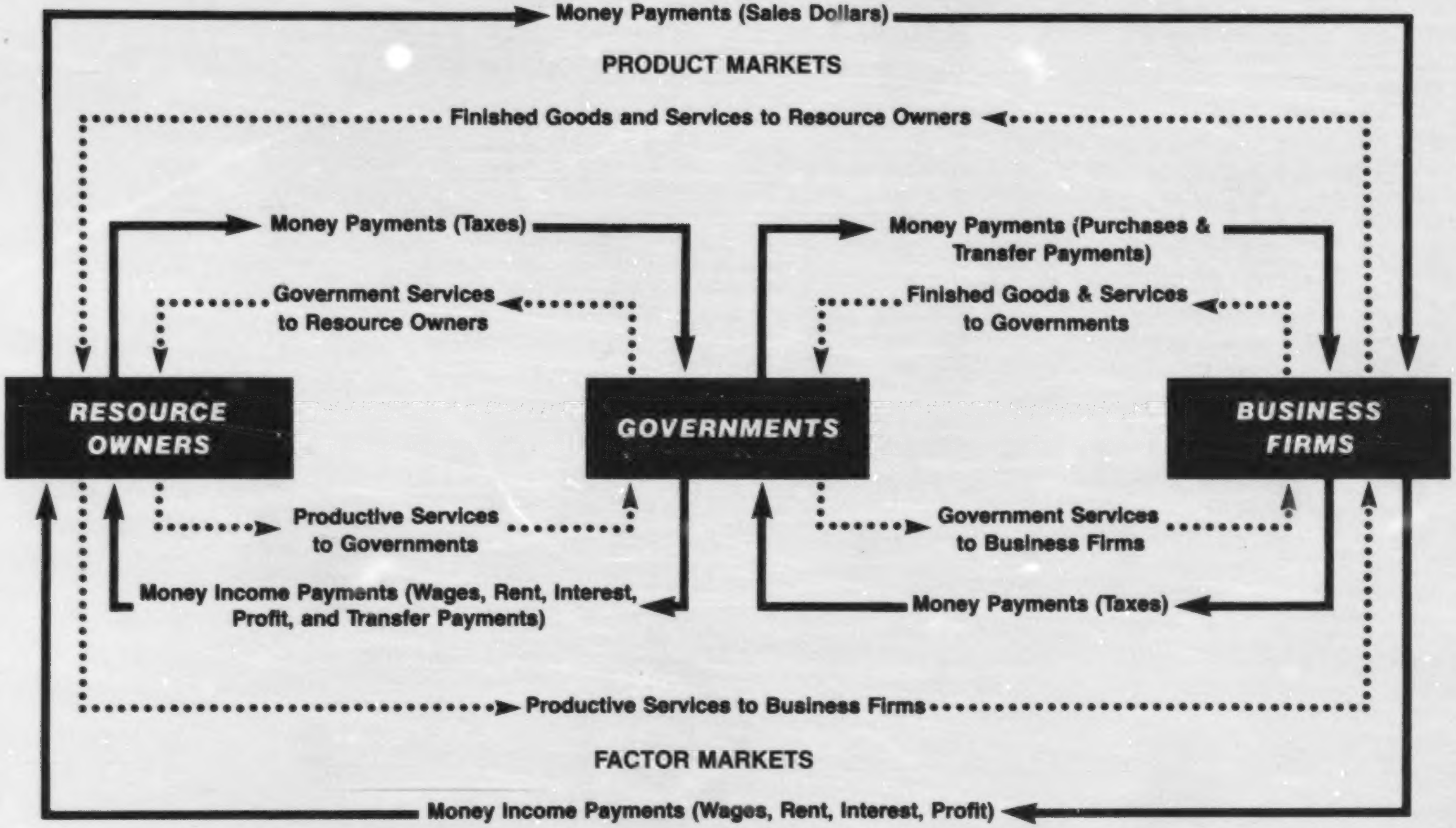
Exhibit 7 presents a more complete diagrammatic overview of the circular flow of resources, goods, services, and money payments in the United States today than Exhibit 4 presented earlier. Governments have been added to the circular flow shown in Exhibit 7. This exhibit indicates that resource owners sell the services of some of their labor and other resources to governments as well as to business firms, and that business firms sell some of their finished goods and services to governments as well as to individual resource owners. Exhibit 7 also shows that governments collect money payments from both business firms and individual resource owners and also make money payments, including transfer payments (see concept 10, on income distribution), to both of these groups. Even Exhibit 7, however, is a simplified overview of how our economy operates. It does not show the saving and borrowing in financial markets by individuals, businesses, and governments, and it does not show trade with foreign nations.

Macroeconomic Concepts

Macroeconomics is the study of the functioning of the economy as a whole, and it deals mainly with the total output and income of the economy, the total level of employment, and movements in the average level of all prices. The heart of macroeconomics consists of analyzing the determinants of aggregate supply (the total productive capacity of an economic system) and of aggregate demand (the total spending by

EXHIBIT 7

Governments in the Circular Flow of Resources, Goods, Services, and Money Payments


Money Payments (Sales Dollars)
PRODUCT MARKETS
Finished Goods and Services to Resource Owners
Money Payments (Taxes)
Government Services to Resource Owners
Money Payments (Purchases & Transfer Payments)
Finished Goods & Services to Governments
RESOURCE OWNERS
GOVERNMENTS
BUSINESS FIRMS
Productive Services to Governments
Government Services to Business Firms
Money Income Payments (Wages, Rent, Interest, Profit, and Transfer Payments)
Money Payments (Taxes)
Productive Services to Business Firms
FACTOR MARKETS
Money Income Payments (Wages, Rent, Interest, Profit)

economic units on the goods and services produced). In the short run, the main problem in macroeconomics is why aggregate demand sometimes exceeds aggregate supply, thereby bringing on inflation, and why aggregate demand sometimes falls short of aggregate supply, thereby bringing on unemployment and deflation—or at least less inflation. Over the long run, macroeconomics is concerned primarily with economic growth—increases in the productive capacity of the economy and in average real income per person.

13. GROSS NATIONAL PRODUCT

Gross National Product (GNP) is the most inclusive measure of the economy's output. **GNP** is defined as the market value of the total output of final goods and services produced in one year. If periods shorter than a year are used to measure output, the results are usually converted to an *annual rate*. It is important to recognize that GNP measures the *flow of output* and not the *stock of wealth*. (The **stock of wealth** consists of the assets that are capable of producing output in the economy at any given time.) It is also important to know that GNP counts only *final* goods and services produced *for the market*. Most nonmarket production, such as the unpaid work of homemakers, is not counted in GNP. Intermediate sales of goods and services among different firms are excluded from GNP in order to avoid "double counting." If a farmer grows wheat and sells it to a miller, who grinds it into flour and sells the flour to a baker, who then bakes the flour into bread and sells the bread to a consumer, how much has the economy produced? It has produced one loaf of bread, which is all that is counted in GNP because the bread is the **final product** of the foregoing chain of economic activity. The wheat and the flour are **intermediate products.** It would be a mistake to count the wheat *and* the flour *and* the bread in GNP, since the value (price) of the bread already includes the value (price) of the flour and the value (price) of the wheat as well as the value of the farmer's and the miller's and the baker's services. When calculating GNP, the value of all goods and services purchased from other producers is subtracted from the sales figures of each producer, and thus only the **value added** at each stage of production is counted. The sum of the values added at each stage of production is equal to the price at which a unit of the final product is sold to its ultimate user.

"Nominal" or "money" GNP measures the output of goods and services in terms of the **current prices** paid to buy the output. "Real" GNP measures the output of goods and services in **constant prices,** that is, in the prices prevailing in a particular year. (See the discussion of real vs. nominal on p. 49.) Comparing GNP in both constant and current prices enables us to distinguish between changes in nominal GNP that are caused by actual changes in output and changes in nominal GNP that are simply the result of changes in prices.

Real GNP is the most comprehensive measure of an economy's output of goods and services in one period compared to another period. **Economic growth** is usually defined as an increase in real GNP or, more meaningfully, in order to take account of population growth, as an increase in real GNP per capita, that is, in the amount of goods and services produced per person.

14. AGGREGATE SUPPLY

Aggregate supply is the total amount of goods and services (real GNP) produced by the economy during some stated period of time. The upper limit on aggregate supply is set by the productive capacity of the economy when all its resources are fully employed. While the economy's full-employment productive capacity is substantially fixed at any moment of time, past experience suggests that it normally grows as time goes on because of increases in the labor force, improved education and training of workers, more saving and capital investment, discovery of new resources, and technological advances.

Since the economy does not always operate at full employment, estimating its full-employment productive capacity is difficult. Some individuals have stronger attachments to the labor force than others, some machines can be operated profitably when their products command certain prices and not at lower ones, and individuals and businesses can change the number of hours they work in response to changing incentives. Some economists, therefore, have developed the concept of an aggregate supply "curve," which relates the total amount of goods and services produced to other variables in the economy such as the average price level or the actual or expected real incomes of suppliers of resources. Not all economists agree with this approach to aggregate supply, however, and much of the discussion and debate in macroeconomics at this writing is over the existence, shape, and behavior of an aggregate supply curve for the U.S. economy.

As indicated earlier, an increase in productive capacity often requires giving up some current consumption in exchange for future increases in output and income. This is true for individuals (who can postpone entering the labor force in order to obtain education, skill, and training that will make them more productive in the future); for businesses (which can retain part of their after-tax profits to buy new machinery rather than paying out all of their after-tax profits to their owners); and for governments (which can raise personal taxes to cut consumption and use the money to finance basic research and development projects, new highways, public training and retraining programs for individuals, etc., or can encourage the enhancement of productivity by granting tax reductions to business firms that buy new plant and equipment). A persistent question in macroeconomics is how much of our resources should be devoted to increasing our productive capacity as opposed to how much should be spent on current consumption.

15. AGGREGATE DEMAND

Aggregate demand is the total amount of spending on goods and services in the economy during some stated period of time. There are two basic approaches to examining aggregate demand. One is to view aggregate demand as the sum of total consumer spending by individuals and households (C), investment spending by businesses for new plant and equipment and for additions to inventory (I), and spending for goods and services by government (G). In this approach, aggregate demand is expressed as $C + I + G$. A second approach is to view aggregate demand as reflecting the stock of money (M) multiplied by the velocity of circulation (V). The **velocity of circulation** is defined as the number of times the average dollar (consisting of checkable deposits as well as currency) is spent on final goods and services. Velocity can be calculated by dividing GNP by the average stock of money during the time period covered by GNP. In this approach, aggregate demand is expressed as $M \times V$.

It is important to note that the $C + I + G$ and the $M \times V$ approaches to aggregate demand simply express two different ways of looking at the same thing. Since, by definition, both $C + I + G$ and $M \times V$ are equal to aggregate demand, this identity can be expressed symbolically as: $C + I + G \equiv M \times V$. As we explain later, government *fiscal policy* (concept 19) influences aggregate demand by working on C, I, and G, the variables on the left-hand side of this identity, and government *monetary policy* (concept 18) influences aggregate demand by working on M and V, the variables on the right-hand side of this identity.

16. UNEMPLOYMENT

Unemployment is defined in U.S. statistics as the number of people without jobs who are actively seeking work. The **unemployment rate** is the number of people who are unemployed expressed as a percentage of the number of people who are in the labor force. The **labor force** consists of people at least 16 years of age who are employed or actively looking for work. A high unemployment rate usually means that there are also idle machines and other unused means of production in the economy. The existence of unemployment does not imply that the basic problem of scarcity has disappeared. Rather, it implies that the nation is not using its scarce resources as effectively as possible. This is reflected in the opportunity cost of unemployed resources, which is the loss of all of the goods and services that these resources could be producing if they were employed. Moreover, unemployed workers lose the income, respect, and self-esteem they would enjoy if they were working. At the same time, the rest of society is confronted with the problem of what, if anything, to do about providing support to workers who are not earning any income of their own.

Not all people who are unemployed have lost their jobs. Some voluntarily left their previous positions and have not yet found new ones, others are looking for work for the first time, still others previously left the labor force and are now returning to it. Likewise, not all people who have lost a job are counted as unemployed. Job-seekers who become discouraged and quit looking for work, for example, are considered to have left the labor force and therefore are not counted as unemployed.

Wide differences exist in the unemployment rates of different groups in the U.S. labor force. The unemployment rate for teenagers 16–19, for example, is usually about three times as high as that for the labor force as a whole. An increase in the percent of the labor force that is under 20 years of age, therefore, might be expected to result in an increase in the overall unemployment rate, and vice versa.

Since the absolute size and composition of the labor force can change in response to different economic and social conditions, many economists have begun to emphasize the employment rate as well as the unemployment rate. The **employment rate** is defined as the percent of the *entire population* age 16 or over that is employed. The U.S. Bureau of Labor Statistics, which issues the nation's employment data, now publishes this measure as well as the more familiar unemployment rate described above.

Because people can become unemployed for different reasons, economists sometimes distinguish between frictional unemployment, structural unemployment, and cyclical unemployment.

Frictional unemployment is the more or less unavoidable unemployment that occurs in a market economy as people change jobs, new entrants into the labor force seek their first job, and people are temporarily laid off from seasonal jobs.

Structural unemployment refers to people who are unemployed because their present ability, skills, training, and location do not "match up" with available job openings that reflect the basic structure of the economy. Changes in consumer preferences, changes in technology, the expansion of new industries and the decline of old ones, and shifts in the economic roles of different geographic regions, all influence the economy's structure and, hence, the types and locations of available jobs. If new jobs require different skills and training than old ones, and if they are located in different parts of the country, structural unemployment may result.

Cyclical unemployment is unemployment associated with changes in the overall rate of economic activity. As the economy contracts, the total demand for goods and services falls, and this causes unemployment to rise. Contrariwise, during economic expansions, the total demand for goods and services rises, and this causes unemployment to fall.

Cyclical unemployment explains major fluctuations in the economy's overall unemployment rate, but the changing size and composition of the labor force and the existence of frictional unemployment and structural unemployment have made it difficult to get agreement on a specific numerical target for "full employment" in the U.S. economy. While a lower unemployment rate may seem desirable, some economists have recently focused on what is called the "natural rate" of unemployment to serve as a policy target. This is the level of unemployment consistent with a stable rate of inflation, and it occurs when the actual rate of inflation is equal to the expected rate of inflation. Under these conditions, increasing aggregate demand to reduce unemployment below the natural rate may lead instead to more inflation.

During the late 1970s and early 1980s the U.S. economy was plagued with both high unemployment and rapid inflation at the same time. This caused many economists to re-evaluate traditional economic policies that have been used to deal with such problems.

17. INFLATION AND DEFLATION

Inflation is a sustained increase in the average price level of the entire economy; **deflation** is a sustained decrease in the average price level of the entire economy. Prices in some markets (e.g., pocket calculators) can fall even in times of inflation, and prices in some markets (e.g., medical care) can rise even in times of deflation. But it is not the change in individual prices that determines the extent to which an economy is experiencing inflation or deflation; it is the upward or downward movement in the *average prices of all goods and services combined* that determines the extent of inflation or deflation.

As the price level rises during an inflation, a dollar buys fewer goods and services than before. Hence, inflation reduces the dollar's real purchasing power. As the price level falls during deflation, a dollar buys more goods and services than before. Hence, deflation increases the dollar's real purchasing power. Because money is used as a unit of account and as a medium of exchange in most economies, changes in the purchasing power of money generally have several adverse consequences. Since inflation has been a more serious problem than deflation in recent years, some of the adverse consequences of inflation deserve mention.

Inflation can produce misleading information in business accounting. Since business is conducted in money terms, figures using changing prices can give deceptive signals. If goods and materials that firms bought at lower prices must be replaced at higher prices, profit figures are often overstated if the profits are calculated on the basis of the lower prices. Such a calculation implicitly assumes that goods and materials can continue to be purchased (replaced) at lower prices when, in fact, they cannot. Depreciation charges based on the original cost of equipment may not provide sufficient funds to replace this equipment after it wears out if inflation has caused equipment prices to rise. Firms that do not, or cannot, increase their depreciation charges will find it difficult to maintain, let alone expand, their investment in capital goods.

Inflation hurts people living on fixed money incomes and people who have saved fixed amounts of money for specific purposes such as financing their childrens' college education or their own retirement. Inflation hurts people who have loaned out money at a rate of interest that did not include an allowance for an increase in the average price level. Lenders in that situation are without protection against a decline in the purchasing power of the loan when it is repaid. People who borrowed money under the conditions just mentioned benefit, since the borrowers will repay their loans in dollars that have less purchasing power than the dollars originally loaned out. In general, if long-term contracts are negotiated in fixed dollar terms, buyers tend to gain and sellers tend to lose during periods of unanticipated inflation.

In large part, as suggested above, the adverse effects of inflation depend on the extent to which inflation is correctly *anticipated* and the extent to which it is *unanticipated.* If inflation is correctly anticipated, contracts can be negotiated to include "inflation premiums." Such premiums are designed to protect lenders and other recipients of future money payments from declines in the purchasing power of the money to be repaid to them. Lenders, for example, will insist on higher interest rates if they anticipate inflation, and the greater the inflation they anticipate the higher the rate of interest they will ask. Borrowers who agree to the lender's terms presumably share similar anticipations of inflation. However, it is often difficult to correctly anticipate a future rate of inflation, and if a mistake is made, there can be an unintended gain to either the lender or the borrower, depending on the direction of the mistake.

In addition to increasing the possibility of misleading accounting statements in business reports and of capricious windfall gains or losses of real income, inflation also encourages "shortsightedness." Under inflationary conditions, predicting future costs and profits of a major investment that will take a long time to pay off, such as an electronics plant or an oil refinery, becomes an even riskier process than otherwise. In general, the increased risks and the higher interest rates that accompany inflation tend to discourage long-range planning as well as investment in long-term projects. These effects, in turn, hinder the expansion of the economy's total productive capacity.

Inflation can occur for several reasons, and economists sometimes distinguish between demand-pull inflation and cost-push inflation. Peoples' expectations, and the way their expectations are formed, also may influence the occurrence and rate of inflation in the economy.

Demand-pull inflation occurs when aggregate demand in the economy increases faster than the economy's productive capacity at full employment. If aggregate demand exceeds aggregate supply, the average prices of goods and services are pulled up by the "excess" demand. Demand-pull inflation is generally associated with rapid increases in a nation's money supply, and is often described as "too much money chasing too few goods."

Cost-push inflation occurs when higher prices for the factors of production increase costs. Most sellers try to push these higher costs on into higher prices even if there is no change in aggregate demand in the economy. **Supply shocks,** such as widespread and severe crop failures or the sharp increases in the price of oil instituted by a cartel that were experienced in the 1970s, can be sources of cost-push inflation if these shocks lead to reduced supply and higher prices throughout the economy.

Price expectations and changes in them can also influence the rate of inflation. If consumers, investors, and businesses begin to anticipate more inflation than currently exists, that expectation can make the anticipated increase in inflation a self-fulfilling prophecy. If consumers think that prices are going to increase, for example, they may rush out to buy before the prices go up. This increases demand and speeds an inflationary spiral of prices. Or if businesses, workers, and lenders raise prices, wages, and interest rates to match the anticipated inflation, other sellers will in turn try to protect themselves by raising their prices. Inflationary expectations can play a key role in generating and maintaining inflation.

We still have much to learn about the process of inflation, as well as about its relation to other macroeconomic problems such as economic growth and unemployment. When conflicts occur, dilemmas in economic policy arise. Should policy, for example, be aimed primarily at achieving long-run price stability or high employment? Primary focus on avoiding inflation may mean higher employment. Primary focus on reducing unemployment may generate increasing inflation. Such dilemmas are especially hard to deal with because of their political implications: high and rising rates of unemployment or inflation, or both, are likely to adversely affect the party in power.

18. MONETARY POLICY

Monetary policy seeks to affect the amount of money available in the economy and its cost (interest rates). Monetary policy is the responsibility of the Federal Reserve System, a quasi-independent agency of the federal government.

As we have indicated, exactly how "money" should be defined in the U.S. economy of today is uncertain. The narrowest definition of money (known as M-1) is the sum of currency (cash), checkable deposits in banks and other financial institutions, and travelers' checks. Currency is printed or coined by the federal government, but the bulk of the nation's money supply, checkable deposits, is created by the lending activities of banks and certain other financial institutions (see next paragraph). In addition to checkable deposits, however, other financial assets, such as money market mutual funds and savings accounts, are easily convertible into cash or checking accounts. Figures for broader definitions of money (known as M-2, M-3, etc.), therefore, are published in addition to those for M-1.

The financial system increases the money supply by making loans to individuals, businesses, and governments. These loans appear as new, additional checkable deposits in the borrowers' checking accounts and thus increase the spending power—or aggregate demand—of the nation's economic units. All institutions that take checkable deposits are required to keep reserves—in the form of vault cash or deposits at a Federal Reserve Bank—behind a stipulated portion of the checkable deposits they hold. Control over the size of these reserves is the principal but not the only means by which the Federal Reserve carries out the nation's monetary policy. If the Federal Reserve provides financial institutions with more reserves, their ability to lend to the public is increased, thus making possible growth in the money supply and in aggregate demand. Conversely, if the Federal Reserve holds down the amount of reserves or lowers its additions to them, the size of the money supply and of aggregate demand are restrained.

Monetary policy today is a subject of considerable controversy. Economists are divided on what Federal Reserve policy ought to be and how it should be executed. Conventional wisdom once said that the Fed should "lean against the wind"—that is, increase the money supply when aggregate demand falls and the economy needs stimulation, and hold the money supply down when aggregate demand rises and inflation threatens. Such a policy, it was felt, would enable the Federal Reserve to keep aggregate demand at a level that would promote price stability and encourage a more stable and desirable level of economic growth. More recently, however, economists who believe in the theory of "rational expectations," and another group of economists known as "monetarists," have argued that it is not possible for the Federal Reserve to be effective by following a "lean against the wind" policy. The rational expectationists argue that whenever consumers, investors, and businesses correctly anticipate shifts in economic policy, they will act in ways that will offset the effects of such shifts. Monetarists believe that the Federal Reserve should take a long-run view and steadily increase the money supply at approximately the same rate as the growth of the nation's productive capacity. They believe the Federal Reserve should *not* attempt to make frequent short-term changes in the money supply in response to changing economic conditions. The monetarists feel that changes in monetary policy create more economic instability than would a fixed policy of steady monetary expansion. These differences of opinion, plus current problems with defining and controlling the money supply, have been making the task of conducting effective monetary management a difficult one.

19. FISCAL POLICY

Fiscal policy consists of changes in taxes, in government expenditures on goods and services, and in transfer payments that are designed to affect the level of aggregate demand in the economy. Fiscal policy can also be used to provide incentives for increasing aggregate supply, such as when special tax concessions are provided to firms that invest in new plant and equipment, or when low-cost student loans are offered in order to encourage people to pursue a college education. Although the president makes proposals regarding fiscal policy in his annual budget messages, the Congress of the United States is largely responsible for ultimate decisions on fiscal policy.

When the government increases spending on goods and services or on transfer payments but does not increase tax receipts correspondingly—and if no other significant changes occur—total aggregate demand will rise and the economy will experience more employment of its resources or more inflation or both. Conversely, when government reduces expenditures without reducing tax receipts, aggregate demand will decline and the economy will experience less employment of its resources or less inflation or both. Similar effects can be obtained by reducing or increasing tax receipts while holding government expenditures constant. A reduction in tax receipts will raise people's disposable income and thus increase aggregate demand in the economy. An increase in tax receipts will reduce people's disposable income and thus lower aggregate demand. But those who emphasize rational expectations (mentioned in the previous section) argue that to the extent that people recognize what these policies are intended to accomplish, fiscal policy can *not* work effectively in the manner just described. The monetarists (also mentioned in the previous section) argue that fiscal policy will not be effective unless it is accompanied by appropriate changes in the money supply.

Apart from the theoretical differences among some economists, the actual task of altering government expenditures and tax receipts to promote overall economic stability and growth has proven difficult to carry out in practice. It usually takes a long time to get legislation through Congress and signed by the president, and changes in taxes and spending often become entangled with questions of income distribution and political expediency as well as with questions of macroeconomic stability and growth. The large federal deficits of recent years also make it increasingly difficult to coordinate monetary and fiscal policy for the purpose of stabilizing the economy. Thus, as with monetary policy, we still have much to learn about fiscal policy and how it can be best used to achieve macroeconomic objectives.

International Economic Concepts

International economics is the study of economic relationships among nations, including international trade and investment and international monetary relations. In general, economists use the same tools of analysis to understand the world economy as they do to understand a national economy. These include opportunity cost, specialization and exchange, markets and prices, supply and demand, and competition and market structure. The principles underlying trade between countries are the same as those underlying trade between regions within a country. Capital and labor move between countries for the same reasons they move from one part of a country to another. Inflation and unemployment may spread around the world just as they do around one country—and for similar reasons. Special problems, which do not exist within a country, arise in international economic relationships, however, because the world is divided into more than 160 political units. Most of these political units place restrictions on international trade that they do not place on domestic trade. Since almost every country has its own monetary system, there must be a "linkage mechanism" permitting people and businesses in one country to change their money into the currencies of other countries with which they wish to carry out economic transactions. This "linkage mechanism" is the network of foreign exchange markets, in which different currencies are bought and sold at a "price" called the foreign exchange rate.

20. ABSOLUTE AND COMPARATIVE ADVANTAGE AND BARRIERS TO TRADE

Economists use the concepts of **absolute advantage** and **comparative advantage** to explain why trade takes place between countries (and between different regions in the same country). These concepts are based on the differences between the opportunity costs of producing goods and services in different areas.

Productive resources are distributed unevenly around the world just as they are within a country. These differences in resource distribution give rise to differences in opportunity costs which make it desirable to specialize and exchange. For example, Wyoming has open spaces suited to cattle-raising but has few people whereas Rhode Island has little space but many skilled workers, a situation that makes it worthwhile to develop industry. Thus, Wyoming has an absolute advantage over Rhode Island in cattle-raising while Rhode Island has an absolute advantage over Wyoming in industry.

If necessary, Rhode Island probably could raise cattle and Wyoming could develop industry. But the opportunity cost of raising cattle in Rhode Island would be the loss of a large amount of industrial output, and the opportunity cost of Wyoming's using its existing resources to develop industry would be the loss of a large amount of cattle production. Each state would be worse off than if each specialized and traded with the other.

The concept of absolute advantage explains why trade takes place between countries with very different economies, such as raw material producers like Malaysia, which produces rubber, and industrialized nations like Japan, which produces machinery. But the greatest volume of international trade today is actually between countries with rather similar economies—that is, between the industrialized nations of North America, Western Europe, and Japan. To explain the basis of this trade we must use the more sophisticated concept of comparative advantage. This can best be understood by considering it first in the context of individual specialization.

Sharon Smith is a top-flight advertising executive. It happens that she can also type faster than any of the secretaries in her offices. Yet, even though she is superior in both skills, it would still pay Ms. Smith to concentrate on her advertising work and let a secretary type her letters. An hour spent typing is an hour not spent on advertising work, and the opportunity cost of this for Ms. Smith would be very high. So she will concentrate on the skill in which her comparative advantage is the greatest and let the secretary specialize in the work in which her disadvantage is the least. In this way the total output of advertising work and typing will be greater than if each person tried to do both jobs.

Applying comparative advantage to countries, it will pay the United States, for example, to specialize in producing jet aircraft and leave the manufacture of lace to Belgium, even if the United States can make both products more cheaply than Belgium. The United States has a greater margin of efficiency over Belgium in jet aircraft than in lace, so the opportunity cost of diverting productive resources away from aircraft and into lace would be very high.

Among nations as among individuals and regions, the concept of comparative advantage relates to the opportunity cost involved in producing more of one good or service and less of another. If each nation specializes in the production and export of those goods and services in which it has either an absolute or comparative advantage and imports from other nations those goods and services in which its advantage is either nonexistent or less, several important consequences follow. World production, world economic growth, and efficiency in the use of limited resources will all be maximized. As a result, consumers everywhere will have access to a greater amount of goods and services at lower prices.

In principle, internationally traded goods and services should be sold in competitive markets at prices determined by supply and demand. Just as they do in a domestic economy, prices in international markets "tell" producers what it is profitable to produce and "tell" consumers on what it is advantageous to spend their money. The changing pattern of prices in international trade should thus determine what will be produced, how it will be produced, and to whom it will be distributed as these prices interact with the mechanisms that perform these same functions within different countries.

In fact, however, international markets are beset by more complexities than domestic markets. One reason is that most governments erect artificial barriers to the free flow of goods and services and productive resources. These **barriers to trade** include tariffs or special taxes on imported goods, quotas, import licenses, export subsidies, state trading, the formation of cartels, controls on the freedom to exchange currencies, and restrictions on immigration. Such obstacles distort the pattern of prices, production, consumption, and the distribution of income in international markets. If the United States restricts the importation of Japanese cars and Philippine sugar, for example, the production of American automobiles and sugar will be encouraged. American workers and sugar growers will have more jobs and higher incomes, but American consumers will pay higher prices for cars and sugar, and American exporters of aircraft and cotton, for example, may suffer reduced sales to Japan and the Philippines. Patterns of production in all three countries may change in an undesirable way, with productive resources moving from more efficient into less efficient uses.

Monopoly also sometimes affects international markets. The government of the Soviet Union, for example, has a monopoly in its foreign trade. Consequently, foreign private businesses that engage in trade with the Soviet Union find themselves dealing with one seller (a monopoly) or one buyer (a monopsony). Sometimes international prices are rigged by international agreement among governments, as is done with tin through the International Tin Agreement and with oil through the Organization of Petroleum Exporting Countries (OPEC).

21. EXCHANGE RATES AND THE BALANCE OF PAYMENTS

An **exchange rate** is the price of one nation's currency in terms of another nation's currency. (The British pound may be worth $1.50 in U.S. dollars, while the German mark may be worth $0.40, etc.). When exchange rates change, both the level of domestic economic activity and the international flow of goods, services, and productive resources are affected.

Some foreign exchange markets are completely free, which means that exchange rates are determined by the play of supply and demand emanating from many buyers and sellers. In other foreign exchange markets, governments intervene to influence exchange rates. A government may actually fix the rates for its own currency by requiring all those who earn foreign currencies to surrender them to a government authority at a government-determined exchange rate. The government then rations or sells the currencies taken in at fixed prices to those who wish to make payments abroad. Other governments may "peg" their exchange rates by buying or selling their own currencies in foreign exchange markets in sufficient quantities to maintain a given set of rates.

From 1946 to 1973, under the Bretton Woods agreement, which was signed by most of the world's countries, governments did intervene continuously in foreign exchange markets in order to maintain a worldwide system of fixed exchange rates. Since 1973, rates have been more or less flexible. Governments have been intervening in foreign exchange markets periodically or sporadically rather than continuously. Because rates neither float freely in response to supply and demand at all times nor are fixed, this practice has been called a "managed float."

An alteration in exchange rates can have a significant effect on the flow of world trade as well as on the domestic economy of a country. If, for example, the U.S. dollar strengthens in terms of the German mark (DM), with the exchange rate moving from say $1.00 equals DM 2.00 (DM 1.00 equals $0.50) to $1.00 equals DM 2.50 (DM 1.00 equals $0.40), German goods will become cheaper for Americans. They can now obtain DM 2.50 for $1.00 instead of DM 2.00. This will cause German imports into the United States to increase. Meanwhile, U.S. exports to Germany will fall because the change in exchange rates has made the U.S. dollar more expensive in terms of German marks, causing imports from the United States to become more expensive to Germans. These changes in exports and imports will stimulate employment in Germany and may reduce employment in the United States. But the greater supply of German goods will help hold down inflationary pressures in the United States. (If the U.S. dollar weakens in terms of the German mark, the effects in each country will be reversed.)

The **balance of payments** (B/P) of a country is a statistical accounting which records, for a given period, all the payments that the residents, businesses, and government of one country make to the rest of the world as well as all the receipts which they receive from the rest of the world. Just as the GNP accounts provide information on the functioning of a national economy, so the B/P helps a nation to understand the state of its economic relationships with the rest of the world. It also helps nations to make appropriate decisions about their policies concerning world trade and finance.

The transactions recorded in the B/P are commonly separated into two portions: the current account and the capital account. The **current account** includes exports and imports of merchandise, receipts and payments relating to services such as tourism, shipping, banking, and insurance, income received from investments abroad, investment income transferred abroad to foreigners, payments and receipts in the form of royalties, government foreign aid given or received, military spending abroad and receipts from such spending, and international transfers of pension payments as well as charitable contributions. The **capital account** consists of movements of long-term capital between countries, such as business investments and purchases of stocks, and bonds, as well as of short-term capital movements—which often consist mainly of banking transactions.

The terms "deficit" or "surplus" commonly used in reference to a country's B/P usually designate the relationship between current account receipts and payments. If receipts are less than expenditures, the country is running a deficit on current account. If receipts are greater than expenditures, the country is running a surplus. Deficits or surpluses in the current account may be offset in the capital account. A surplus or deficit on the *entire* B/P is recorded as, and results in, a gain or loss in official government reserves—chiefly gold and holdings of foreign exchange.

A study of the B/P reveals much information on the state of the demand for and supply of currencies in foreign exchange markets which, in turn, as we have seen, determine exchange rates. U.S. imports, investments abroad, foreign travel, and military spending for troops stationed in foreign countries, for example, all add to the supply of dollars in foreign exchange markets. These dollars constitute part of the demand for other currencies, say, Japanese yen. When foreigners buy our exports, visit this country, or invest in the United States, or when foreign businesses, banks, or governments repay loans to Americans, then foreign currencies are being supplied and dollars are being demanded in foreign exchange markets. In a free market, the dollar's rate of exchange for foreign currencies depends on the relationship of both sets of demands and supplies just described. In this regard it is important to emphasize that it is the B/P as a whole, and not any one item taken separately, that is important. The state of the balance of trade (exports-imports) alone, for example, does not determine a country's supply of and demand for foreign exchange. That is determined by *all* payments and *all* receipts taken together.

22. INTERNATIONAL ASPECTS OF GROWTH AND STABILITY

The international economic concepts of comparative advantage, barriers to trade, exchange rates, and balance of payments are more important today than in the past because all nations are now so much more interdependent. The international transfer of investment capital and technology from rich, developed to poor, less developed countries (LDCs) where capital and modern technology are scarce is vital to both the LDCs and the entire world economy. International investment takes place through both private and public channels. Private investments are made by businesses, particularly large multinational corporations, as well as by private purchases of foreign stocks and bonds. Public transfers of capital are made by governments through foreign aid programs and by official lending by international organizations, of which the World Bank is the largest.

In some cases the flow of labor across international borders can also promote economic growth. This was true during the years of unlimited immigration into the United States in the nineteenth century. More recent examples are Australia after World War II and the flow of Italian and Turkish workers into West Germany in the 1960s. The large volume of Mexican immigration into the United States, both legal and illegal, in recent years reflects the working of the market mechanism. Labor is flowing from an area where wages are relatively low and job opportunities relatively limited to an area where wages are relatively high and job opportunities relatively plentiful.

Like economic growth, both inflation and unemployment—so important in Western industrial nations—are no longer purely domestic phenomena. They can be—and are—transmitted from one country to another through flows of trade and money. If the United States and other Western industrialized nations go into recession, as they did in 1974–75 and 1981–82, for example, the incomes of their citizens and the output of their industries drop. Their imports decline. This decline hits many less developed countries hard, for they depend heavily on sales of their primary products (copper, bauxite, sugar, wool, and the like) to the industrialized countries. Falling sales and prices bring the recession to the LDCs. Their foreign exchange earnings fall; they are unable to pay for needed imports; and they may become unable to repay their debts—or even the interest on them. Thus, worldwide recession tends to become a cumulative process. Conversely, if the economies of industrial countries are all booming, the demand for primary products increases in world markets, and the product prices rise. Such booms also tend to cumulate.

In theory, the major industrial powers acting in concert could use monetary and fiscal policies to maintain high-level output and employment without inflation. That would help achieve world economic stability at high levels of output. In practice, countries usually follow somewhat different—and sometimes incompatible—monetary and fiscal policies that frequently result in different rates of growth and inflation (or deflation) and thereby produce fluctuations in foreign exchange rates.

In sum, the complex world economy can be understood by using much the same concepts of economic analysis as for a domestic economy. The special problems of the world economy arise because the world is divided into numerous countries. Each has sovereign powers over the flow of goods, services, capital, and people across its borders and each has its own monetary and fiscal policies which influence exchange rates and the balances of payments among nations.

Measurement Concepts and Methods

Economists and other analysts use a number of measurement concepts and methods to explain economic developments and assess economic performance. Many of these are included in the mathematics curriculum, though in some cases they are described there using somewhat different terminology. The same concepts and methods can be taught with an emphasis on their applicability and usefulness in understanding economics rather than by following the more traditional approach of drawing examples almost exclusively from the physical sciences and engineering.

TABLES

Tables are used to present numbers in a concise fashion and to reveal particular relationships among sets of numerical data. Tables 1 and 2 illustrate two common forms of presentation. The title of each table provides a general indication of its subject and/or purpose. The source note below the table states where the data come from; lettered footnotes present qualifications or more detailed explanations as needed.

Table 1 is a **time series**. Tables of this kind show data by time

Private and Public Sector Employment in the United States 1976–81

CHART 1
Line chart

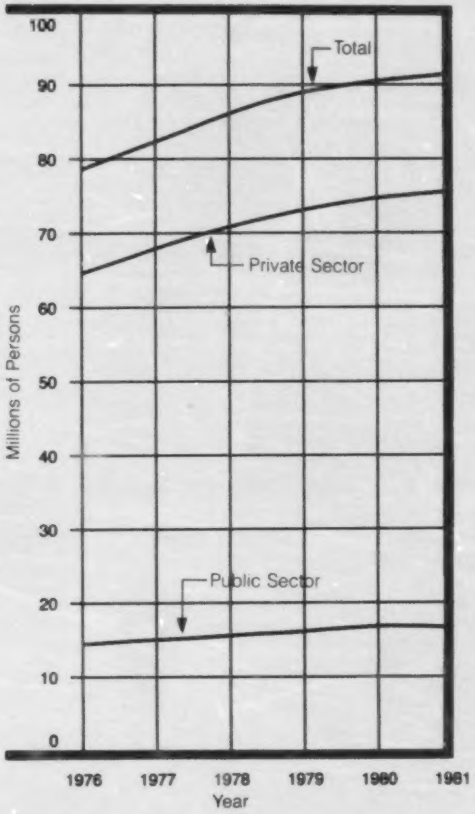


CHART 2
Bar chart

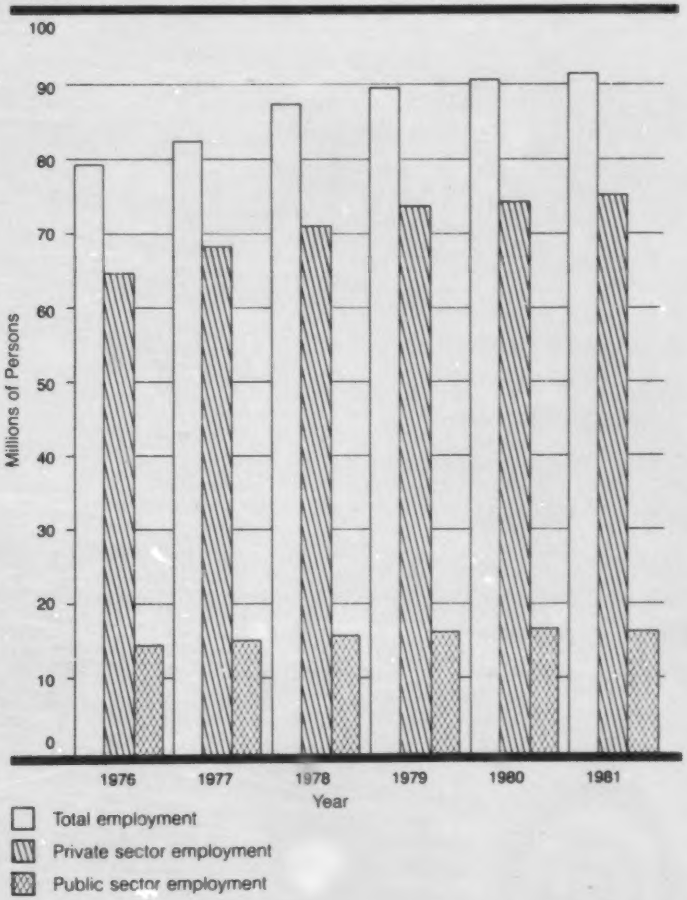
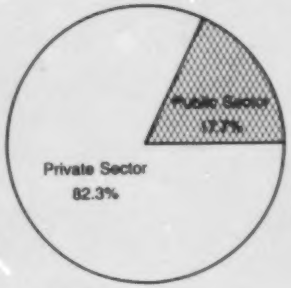


CHART 3
Pie chart

Composition of Employment in the United States, 1979



SOURCE: See Table 1.

TABLE 1

Private and Public Sector Employment in the United States, 1976–81
(millions of persons)

Year	Total	Private Sector	Public Sector*
1976	79.4	64.5	14.9
1977	82.5	67.4	15.1
1978	86.7	71.0	15.7
1979	89.8	73.9	15.9
1980	90.4	74.2	16.2
1981	91.1	75.1	16.0

SOURCE: *Monthly Labor Review*, December 1982, p. 63.
*Includes federal, state, and local government employment.

period—day, month, quarter, year—for a number of periods. The information in the first column gives the time period; in this case, the period is yearly, beginning with 1976. The labels at the tops of the next three columns describe what sort of data are given for each time period; in this example, total employment, private-sector employment, and public-sector employment in the United States. The numerical data themselves are then presented in the rows and columns of the table.

Table 2 shows a **cross section** of some of the data in Table 1, i.e., a snapshot of the information in one particular time period. As before, the labels in the first column and at the tops of the second and third columns describe the data provided. Exhibit 6 on page 27 provides other examples of cross-section tables. The two tables in that exhibit present data on income distribution in the United States in 1982.

Tables can also be used to show relationships between economic variables. Exhibit 5 on page 24, for example, presents supply and demand data in the form of a table or "schedule."

TABLE 2

Private and Public Sector Employment in the United States, 1979

	Millions of Persons Employed	Percentage of Persons Employed
Total	89.8	100.0%
Private sector	73.9	82.3
Public sector*	15.9	17.7

SOURCE: *Monthly Labor Review*, December 1982, p. 63.
*Includes federal, state, and local government employment.

CHARTS AND GRAPHS

Charts are used to present relationships among quantitative data in pictorial form. Charts 1, 2, and 3 illustrate some common types. Chart 1 pictures the data that appear in Table 1. This is a **line chart,** in this case showing time along the horizontal axis and employment along the vertical axis. The title and footnotes serve the same purposes as their counterparts in Table 1. Line charts are often called **graphs.** Chart 2 depicts the same data as Chart 1, but in the form of a **bar chart:** differently marked or differently colored bars replace the simple lines used in Chart 1. Chart 3 pictures the data in Table 2 in the form of a **pie chart.** It answers the question: What percentage of total employment in 1979 is represented by employment in each sector?

There are other ways of picturing economic relationships apart from those illustrated here. Exhibits 4 and 7 on pages 23 and 32, for example, show flow charts to illustrate the interrelationships of market exchanges in the U.S. economy.

RATIOS AND PERCENTAGES

Ratios express the relationship of one numerical value to another. The data in Table 2, for example, indicate that the ratio of private employment to total employment in 1979 was 73.9/89.8. A ratio can also be expressed as a decimal fraction, i.e., 73.9/89.8 = .823. Multiplying a decimal fraction by 100 restates it as a percentage, i.e., .823 × 100 = 82.3%. The latter tells us that 82.3 percent of total employment in 1979 was in the private sector.

Percentages (often represented by the symbol %), therefore, are a simple way of expressing ratios or proportions between numbers in terms of hundredth parts. What proportion of $100 is $50? It is 50/100 = 0.5, or 0.5 × 100 = 50%.

PERCENTAGE CHANGES

Percentage changes are used to measure the relative change in economic variables from one time period to another. Thus, the percentage change in teachers' average salaries during the period 1970 to 1980, displayed in Table 3, is 158 percent. This number is calculated by dividing the *change* in average salary during the period ($16,000 − $6,200, or $9,800) by the average salary in 1970: 9,800/6,200 = 1.58; multiplying by 100 yields 158 percent.

Percentages can be useful aids in making comparisons. At the same time, however, one must pay careful attention to the base numbers—the denominators—used in calculating percentage changes. Equal percentage changes do not imply equal changes in the underlying absolute numbers, unless all the comparisons use the same base number. For example, a 10 percent increase from 100 is a change of 10 (from 100 to 110), but a 10 percent increase from 1,000 is a change of 100 (from 1,000 to 1,100). Likewise, equal changes in absolute numbers

TABLE 3

Average Salaries of Teachers, Grades K–12, 1970–80

	Dollar Amount*	Percentage Change	Index (1970 = 100)
1970	$ 6,200	–	100
1975	11,700	89	189
1980	16,000	158	258

*From *Statistical Abstract of the United States* (103rd edition), p. 152.

do not signify equal percentage changes unless, as noted before, all the comparisons use the same base number. For example, an increase of 10 from 10 to 20 is a 100 percent increase, but an increase of 10 from 20 to 30 is a 50 percent increase. These cautions about making comparisons when the percentage changes consist of increases also apply when the percentage changes consist of decreases. There is no limit to how large a percentage increase can be, but a percentage decrease can never be larger than 100 percent.

INDEX NUMBERS

Index numbers measure changes in economic variables using a fixed base value for comparisons. The base value can be for a single year, or it can be an average of several years. With rare exceptions, the base index number is set at a value of 100, and all other numbers are expressed as a percentage of the base period value. We can construct an index of the teachers' salaries shown in Table 3, for example, by setting the 1970 value equal to 100 and expressing the 1975 and 1980 values as percentages of the 1970 value. As shown in Table 3, the index of teachers' salaries in 1975 is 189 and in 1980 it is 258, when 1970 is given the base year value of 100.

Calculating percentage changes *from the base year* is easier using index numbers than using the standard percentage change formula explained earlier. The percentage change in average teachers' salaries from 1970 to 1980, which we calculated earlier as 158 percent, for example, can be read directly from Table 3 by subtracting the 1970 index number of 100 from the 1980 index number of 258. To calculate percentage changes from years other than the base year, however, use the procedure explained in the first paragraph under "percentage changes" above.

REAL VS. NOMINAL VALUES

Monetary variables in economics can be expressed in "nominal" values or in "real" values. **Nominal** monetary values are measured in **current prices**, that is, in the prices prevailing in the period represented by the variable. **Real** monetary values are measured in **constant prices,** that is, in prices of a given—or base—year. When the level of any set of prices changes, the difference between nominal values and real values (or the difference between current prices and constant prices) can be substantial.

Real (or constant) monetary values are obtained by adjusting or "deflating" nominal monetary values with an appropriate index of prices. (See Table 4, which shows the average teachers' salaries presented earlier along with figures for the Consumer Price Index.) The **Consumer Price Index** (CPI) measures the change from some base year in the average level of prices for a fixed collection of goods and services bought by urban families and individuals. For ease of comparison, we use 1970 as the base year for the CPI data shown in Table 4.

The real value of teachers' salaries (in constant 1970 prices) is obtained by dividing the nominal salary values by the Consumer Price Index and multiplying the result by 100 to get the decimal in the right place, that is, to convert the figure back to a dollar amount. For 1970 the calculation is $6,200/100 = 62.00; 62.00 × 100 = $6,200. For 1975 the calculation is $11,700/139 = 84.17; 84.17 × 100 = $8,417.

TABLE 4

Nominal and Real Average Salaries of Teachers, Grades K–12, 1970–80

	Nominal Salaries (current dollars)	Consumer Price Index (1970 = 100)	Real Salaries (in dollars of constant 1970 purchasing power)
1970	$ 6,200	100	$ 6,200
1975	11,700	139	8,417
1980	16,000	213	7,512

For 1980 the calculation is $16,000/213 = 75.12; 75.12 × 100 = $7,512.

The resulting figures for the real value of teachers' salaries indicate that the increase between 1970 and 1980 was much less than the increase shown by the nominal values. The average salary increase in nominal terms was 158 percent. The average salary increase in real terms was 21 percent ($1,312/$6,200 = 0.21; 0.21 × 100 = 21 percent). Calculations for the 1975–80 period will show that the average value of teachers' salaries in real terms actually fell during that period. These examples illustrate the importance of knowing the difference between real and nominal values.

AVERAGES AND DISTRIBUTIONS AROUND THE AVERAGE

"**Average**" is a general term for a single number that is used to summarize the meaning of a large amount of numerical data. The two most common measures of averages used in economics are the median and the arithmetic mean.

The **median** is the middle-most value when the individual values in a set of data are arranged by magnitude from the lowest value to the highest value. Such an arrangement is called an "array." Half the values in the array are above the median; half are below. The **arithmetic mean** (sometimes called the "mean" or simply the "average") is the sum of all values in a set of data divided by the number of values included. Table 5 shows an array of the 1983 sales receipts of the top 25 corporations in *Fortune* magazine's list of the 500 largest U.S. industrial corporations. The median sales figure for this array of 25 values is the thirteenth, the $19,678 million shown for Shell Oil. The arithmetic mean for these 25 sales figures is $28,040 million.

Extreme values in a set of data have a stronger influence on the arithmetic mean than on the median. That is why there is a big difference between the mean and the median values in the data just cited. Therefore, careful interpretation of any average value usually requires some knowledge of the distribution of values around the average.

TABLE 5

The 25 Largest U.S. Industrial Corporations, Ranked by Sales, 1983

	Sales (millions of dollars)
Exxon	$88,561
General Motors	74,582
Mobil	54,607
Ford Motor	44,455
International Business Machines	40,180
Texaco	40,068
E.I. du Pont de Nemours	35,378
Standard Oil (Indiana)	27,635
Standard Oil of California	27,342
General Electric	26,797
Gulf Oil	26,581
Atlantic Richfield	25,147
Shell Oil	19,678
Occidental Petroleum	19,116
U.S. Steel	16,869
Phillips Petroleum	15,249
Sun	14,730
United Technologies	14,669
Tenneco	14,353
ITT	14,155
Chrysler	13,240
Procter & Gamble	12,452
R.J. Reynolds Industries	11,957
Getty Oil	11,600
Standard Oil (Ohio)	11,599

SOURCE: *Fortune*, April 30, 1984, p. 276.

IV. Evaluating Economic Performance and Policies

As we indicated in the introduction to this *Framework*, a key element in economic understanding is the ability to make effective decisions about economic issues. Economic decisions, however, are not made in a vacuum. Rather, they are made in the light of a set of goals, which often differ from one society to another as well as among groups and individuals within societies. In this chapter we discuss the broad social goals that seem most important in the United States today, the problem of trade-offs among goals, and the role of self-interest and personal values.

Broad Social Goals

The broad social goals that relate to economics and which are given considerable importance in American society today are economic freedom, economic efficiency, economic equity, economic security, economic stability (full employment and the absence of inflation), and economic growth. These goals, and the importance attached to each of them, guide individuals and society in the making of decisions. The goals provide targets and a sense of direction in formulating the means for reaching these targets.

These goals can also be thought of as criteria for evaluating the performance of the economic system (or parts of the system) and for examining the usefulness of new as well as existing programs. Some of the goals, such as freedom or equity, are difficult to present in quantitative form. Others, such as full employment or price stability, can be articulated as numerical targets. Indeed, in 1978 Congress for the first time established specific numerical goals for unemployment and inflation. The 1978 legislation, popularly known as the Humphrey-Hawkins Act, set the target for the unemployment rate at 4 percent, to be achieved by 1983. The rate of inflation, as measured by the consumer price index, was to be reduced to 3 percent by 1983 and to zero by 1988.

A comparison of the goals of the Humphrey-Hawkins Act with what has happened as of this writing makes it clear that economic goals are rarely if ever fully attained; if they are, it is usually for short periods of time only. Nevertheless, the results point up the conclusion that only by attempting to set clear, specific goals is it possible to measure the progress made in attaining them.

1. ECONOMIC FREEDOM

Freedom as an economic goal concerns the freedoms of the marketplace—the freedom of consumers to decide how they wish to allocate their spending among various goods and services, the freedom of workers to choose to change jobs, join unions, and go on strike, the freedom of individuals to establish new businesses and to decide what to produce and when to change the pattern of production, the freedom of savers to decide how much to save and where to invest their savings. Of particular interest is the effect of actions by individuals, groups, or governments to enhance or restrict freedom in the marketplace and thereby affect the possible attainment of the other goals of efficiency, equity, security, stability, and growth. A number of people argue that government regulation limits the freedom of some people to make their own choices. Others argue that government policies may free some people to take greater advantage of the opportunities provided in a market economy. Given the differences in viewpoint, it is essential to define the kinds of freedom under discussion and whose behavior is most likely to be affected.

2. ECONOMIC EFFICIENCY

Efficiency can have two meanings. The term can refer to **technical efficiency,** which focuses on using the least input of resources to obtain some stated level of output, or obtaining the highest level of output using fixed inputs of specified resources. Since technical efficiency does not take into account the different costs of various inputs or the different benefits of various outputs, considerations of technical efficiency alone cannot indicate the most appropriate decision to make. An economy might be technically efficient in producing good A, for example, but if consumers do not want good A and prefer good B instead, then it would not be economically efficient to produce good A.

Economic efficiency is a broader concept than technical efficiency. Economic efficiency goes beyond technical efficiency and takes into account the costs and benefits associated with various market preferences and decisions. In order to obtain maximum benefits from using our limited resources, we should undertake only those economic actions which result in additional benefits that exceed the additional costs. By this standard, economic actions should not be undertaken if the additional costs exceed the additional benefits. The concept of economic efficiency is central in economics, and it should receive heavy emphasis in both individual and social decision-making.

3. ECONOMIC EQUITY

Equity, which deals with what is "fair" and what is "unfair" or what is "right" and what is "wrong," is difficult to define precisely. Economic equity can be described as the application of our concepts of what is fair and what is unfair—or of what "ought to be" and "ought not to be"—to economic policy. To be sure, people differ in their conception of what represents equity or fairness. However, in evaluating economic performance, the concept serves as a reminder to investigate which or what kinds of people are made better or worse off as a result of, for example, a change in prices or the introduction of a new government program. Though two actions may appear to be equally efficient from an economic standpoint, one could benefit the old and another the young, one might benefit consumers and another producers, and so on. Many people would not be indifferent about who benefits from a policy, because they harbor some general idea of what is equitable. From the viewpoint of economics, equity ultimately deals with the distribution of income and wealth. One way of dealing with this question is simply to talk about the effects of economic actions on the distribution of income and wealth: Who gains and who loses? The distinction between equality of *opportunity* and the equality of *results* is also important when economic equity is addressed.

4. ECONOMIC SECURITY

The goal of economic security concerns the desire of people to be protected against economic risks over which they may have little or no control. Such risks include accidents on their jobs, unemployment, destitution in old age, business failures, bank failures, and precipitous price declines for one's product. Economic security is enhanced by individual efforts, such as savings and the purchase of insurance, as well as by the growth of the economy, through which the mass of people receive more material well-being. Various government programs such as worker's compensation, unemployment compensation, social security, aid to families with dependent children, federal insurance of bank deposits, and farm price supports are also aimed at increasing economic security in the United States. Nations also engage in the quest for economic security by seeking international agreements which assure them of access to key resources or of adequate prices for their exports. In the last analysis, it is the possession of real goods and access to services or assured claims to goods and services that provides economic security.

5. FULL EMPLOYMENT

Full employment prevails when all of an economy's resources are utilized to capacity, but most discussion turns on the employment or unemployment of people. In practice, an unemployment rate for people that reflects normal frictional unemployment—unemployment that occurs as workers change jobs or enter the labor force—has come to be viewed as full employment. Debate continues as to what unemployment rate—at present suggestions range from 3 to 7 percent of the labor force—constitutes full employment. But keeping the goal of full employment in view helps to remind us of the costs in lost output to the economy and in economic hardship to individuals that result from rates of unemployment that are too high.

6. PRICE STABILITY

As we have indicated, overall price stability means the absence of inflation or deflation, not the absence of changes in relative prices in particular markets. In reality, overall price-level changes are not often likely to be zero. Not only do our price indexes fail to reflect some improvements in product quality that in effect lower certain prices, but more important, price changes reflect the push and pull of market forces as changes occur in supply and demand. What constitutes "reasonable" price stability is the subject of much discussion. Nonetheless, this goal recognizes that sharp price changes necessitate costly adjustments in the behavior of individuals and businesses in order to cope with the effects such changes produce.

7. ECONOMIC GROWTH

Economic growth means producing increasing amounts of goods and services over the long term. If the people of a society want to raise their level of living, they must produce more goods and services. If the population is growing, the amount produced must be still greater to provide for the additional people. This is why changes in real GNP *per capita* (that is, per person) are usually more meaningful than changes in total GNP as a measure of growth.

Economic growth is an important goal in virtually all countries, and it is closely related to several of the other goals discussed above. Both individuals and nations try to increase their economic security and well-being by expanding output. Individuals seek ways to enhance their earning ability while nations seek to stimulate the growth of per capita output and income. Economic growth helps provide jobs for a growing labor force, and economic growth also makes it easier for a society to devote some of its output to promoting greater economic equity and greater economic security by assisting the disadvantaged, the disabled, or other groups that need help. If output does not grow, one person or one group can obtain more goods and services only if another person or group receives less. But, to revert to an often-used metaphor, when a larger economic pie is baked, everyone can have a larger slice.

On the supply side, the upper limit to economic growth is determined by the availability of productive resources, the efficiency with which these resources are used, and the economic, social, and political factors that either encourage or discourage an increase in productive capacity. These latter factors include the size of the market, the value system of the people, and the degree of political stability or instability. Once the productive capacity of an economy is established, the actual rate of growth in a market economy will be determined by the level of aggregate demand. If an economy is in a recession and aggregate demand is too low to fully employ existing resources, there will be little market incentive to increase productive capacity. Thus, there is a close relationship between the short-run goal of full employment and the long-run goal of economic growth. As we have indicated, the existence of rapid inflation also hinders the long-run expansion of a nation's total productive capacity.

8. OTHER GOALS

The foregoing broad social goals are not immutable. As economic conditions change and as social patterns shift, goals are constantly being rethought and sometimes redefined. From time to time other goals appear and take priority. In the early 1940s, for example, the United States's main objective was to mobilize the economy to win World War II. Strengthening our nation's defenses also became an increasing concern in the early 1980s, as did improving the quality of education. In the 1960s, President Kennedy committed the nation to putting a human being on the moon, and President Johnson emphasized the need to build a "great society," including improving the treatment of women and minorities in the marketplace. In the 1970s, environmental concerns received increasing attention, and the world's attention was focused on energy supplies. In the late 1980s, the nations of the world are likely to pay increasing attention to their economic relations with each other.

Not only do broad social goals change, but the relative importance attached to these goals also shifts from time to time. When inflation is rampant, for example, concern about unemployment tends to decline; when equity considerations become uppermost in people's minds, concern about economic efficiency lessens; when environmental concerns increase, the emphasis on economic growth tends to diminish. Moreover, we constantly face the problem of trade-offs among our broad social goals.

Trade-offs among Goals

The pursuit of any goal requires calculating the costs of achieving it versus the value of the expected benefits. In this way economic analysis enables us to make clear-minded decisions about goals that reflect our individual as well as our national values and objectives. Since many of our broad social goals conflict, difficult trade-offs frequently have to be made in making specific policy decisions. Some examples: farm price supports, which promote security for some farmers but may reduce efficiency in agriculture and raise prices for consumers; minimum wage laws, which are an attempt to increase equity (by trying to raise the wages of lower-paid workers) but may do so at the cost of increased unemployment; and wage-price controls in order to restrain inflation, which do so only temporarily and reduce economic efficiency and freedom.

Economic growth also involves costs and trade-offs as well as benefits. Protection of the environment seems to almost always involve a trade-off. If we wish to preserve or clean up the environment, we may have to pay the price of having less—for example, going without the coal we would have if strip-mining were permitted. If the government requires automobile manufacturers to install antipollution devices, the car will cost the consumer more. If a city builds a water purification plant, citizens may have to pay higher taxes to finance it.

In general, cleaning up and preserving the environment is likely to divert resources into environmental protection and away from growth, and this will affect our measurements of the GNP. Spending on growth, e.g., for an additional factory, will have the consequence of increasing future GNP through the inclusion of the future output of the new factory. Spending on a cleaner environment, e.g., for the reduction of air pollution, will improve the quality of life, but since the cleaner air is not sold in the market, it will not be included as an addition to GNP. Thus, society's choice of trade-offs will have different effects on the statistics we conventionally use to measure economic growth.

We may conclude that any particular economic goal must be viewed as one of several goals individuals and societies try to reach, and that trade-offs are inherent in pursuing multiple goals. Economic analysis seeks to inform people about what they must give up with respect to one goal as they consider the gains from attaining another. Such analysis helps people make more intelligent decisions by clarifying the nature of the trade-offs among various goals.

Self-Interest and Personal Values

The idea of self-interest differs from the goals discussed above. Self-interest reflects the concern of individuals for their own well-being and personal values, whereas the other goals we have noted reflect broader social concerns. The achievement of social goals often comes at the expense of particular individuals or groups. The individuals or groups adversely affected may well oppose steps to achieve the goals. This means that the positions people ultimately take on economic issues will be affected by their own self-interest as well as by the weight they put on broad social goals. It is important to try to separate these two types of goals in order to understand why people ultimately reach the decisions they do on economic issues.

V. Applying Economic Understanding to Specific Issues

As the Introduction explains, the purpose of teaching economics at the primary and secondary levels is not only to impart a general understanding of how our economy works, but also to improve economic decision-making by students through the use of an orderly, reasoned approach. The kind of systematic diagnosis Malcolm used in the case described in Chapter II is applicable to most economic problems, whether personal or public. The following cases extend the use of such a decision-making model to two economic issues involving public policy.

The first case deals with a microeconomic issue: the extent, if any, to which a state should exert control over the price of eggs that are produced within its borders. The second case deals with a macroeconomic issue: how the economy might adjust to a large, permanent decline in defense spending by the federal government. These two cases illustrate the many opportunities that citizens in a democratic society have to influence decisions about important public policies either by making their views known to legislators and other public officials, by voting, or by both means.

The Case of Egg Diversion

This case is based on two newspaper reports. A newspaper in State A reported that the price of eggs had declined from 72 to 65 cents per dozen in recent months. The reason was reduced consumer demand because of an economic recession. The story went on to say that, as a result of the price decline, several local egg producers were forced out of business and that others complained about the difficulty of earning a reasonable profit. One rural legislator called for an investigation of the slide in egg prices and its impact, but nothing had come of his suggestion.

The other news report appeared in State B. It stated that a board in that state had decided to continue diverting 5 percent of the state's weekly egg production from the consumer market in order to keep egg prices up. The report continued:

> The 16-member State Egg Advisory Board, on a 9–5 vote with two abstentions, turned down a motion from consumer representatives to quit buying up and thereby diverting 10,000 cases of eggs a week—30 dozen eggs to the case—from the consumer marketplace for later sale abroad at lower prices. The policy, in effect since November, helps hold prices in the state up to about 72 cents a dozen.

Inflation-squeezed egg farmers, hurt by soaring grain and feed prices, said that ending the diversion policy would depress prices, probably as much as 5 to 8 cents a dozen, and would force smaller egg producers out of business.

The issues described in the two newspaper reports are representative of the problems raised by federal farm policy in respect to several major agricultural products. People must make up their own minds about such policies after considering the probable gains and costs to producers, to consumers, and to any others concerned. The key question in this case about eggs is: would it be better to let competition govern the market for farm products or to employ government intervention? The answer depends on which course is deemed to provide the most benefit to the individuals directly concerned and to society as a whole. Or, to put it another way, which course will prove to be the least detrimental in achieving the foregoing objectives.

Individuals can use the five-step reasoned approach outlined in Chapter II of this *Framework* to reach their own conclusions on the question.

1. STATE THE PROBLEM OR ISSUE

The basic question raised in this case is whether a state should buy eggs and thereby divert supply from the consumer market in order to maintain prices above where they would otherwise be. Closely related questions are how a system of egg diversion helps or hurts various groups: domestic egg producers, domestic egg consumers, state taxpayers, foreign egg producers, and foreign egg consumers.

2. DETERMINE THE PERSONAL OR BROAD SOCIAL GOALS TO BE ATTAINED

The most relevant broad social goals seem to be efficiency, equity, and security; the most relevant personal goals are the self interest of domestic egg producers and consumers, foreign egg producers and consumers, and state taxpayers.

3. CONSIDER THE PRINCIPAL ALTERNATIVE MEANS OF ACHIEVING THE GOALS

This case presents only two alternatives. One is to allow the price of eggs to fluctuate in response to changing market conditions, as they do in State A. The other is to have a State Egg Advisory Board use taxpayers' money to buy up to 10,000 cases of eggs a week in order to hold the price near 72 cents per dozen, as is done in State B. In the second alternative, the Egg Advisory Board sells the "surplus" eggs abroad at a price below 72 cents per dozen. (Other alternatives might also be considered, but they are omitted in this example.)

4. SELECT THE ECONOMIC CONCEPTS NEEDED TO UNDERSTAND THE PROBLEM AND USE THEM TO APPRAISE THE MERITS OF EACH ALTERNATIVE

The concept of opportunity cost (number 2 in the list that appears in Chapter III) lies at the heart of nearly all issues of economic choice.

EXHIBIT 8

Sample Decision-making Grid for the Egg Diversion Case

	GOALS OR CRITERIA									
		Equity					Security			
ALTERNATIVES	Efficiency	Help Domestic Producers	Help Domestic Consumers	Help Domestic Taxpayers	Help Foreign Producers	Help Foreign Consumers	Help Domestic Producers	Help Domestic Consumers	Help Foreign Producers	Help Foreign Consumers
Rely on competitive market forces (State A)	+	−	+	0	0	0	−	+	0	0
Support prices by state egg board purchases (State B)	−	+	−	−	−	+	+	−	−	+
Other										

In addition, this case requires use of the concepts of markets and prices (7), supply and demand (8), competition and market structure (9), income distribution (10), and the role of government (12).

A decision-making grid similar to the one discussed earlier can be used to structure the analysis. In the grid shown in Exhibit 8, the broad goals of efficiency, equity, and security are entered across the row at top. The alternatives of relying on competitive market forces or of supporting prices by state egg board purchases are entered in the left-hand column. Since the goals of equity and security may have different implications for state taxpayers, domestic producers, domestic consumers, foreign producers, and foreign consumers, a grid containing a total of at least 20 cells is necessary to analyze this case.

By definition, economic efficiency involves satisfying consumer preferences with a minimum use of resources. Since a competitive market usually ensures that consumers as a whole will be able to satisfy their preferences at the lowest possible prices, we have entered a plus sign (+) in the cell that relates competitive market forces to the goal of efficiency. We have entered a minus (−) in the cell that relates regulated prices to efficiency because holding the price up to 72 cents per dozen keeps more producers in the egg business; and in the absence of government intervention about 10,000 cases of eggs each week go unsold at that price. The opportunity cost of the unsold eggs in State B is the loss of the other things the surplus resources in the egg business could have produced instead of the eggs. In State A, however, the egg producers who are driven out of business are forced to find other uses for their resources. In State B, resources are used to continue producing eggs that must be bought with taxpayers' money for resale abroad at a lower price. The need to devote resources to the buying and selling of the surplus eggs is another source of inefficiency in State B. This inefficiency does not occur in State A, since the forces of supply and demand result in a market-clearing price that does not leave a surplus of unsold eggs on grocer's shelves. Other aspects of market structure and the role of government can also be used to assess economic efficiency in this case. In the absence of externalities or other types of market failures, none of which appear to be present in this case, our society usually relies on competitive markets to promote efficiency. In State B, however, government intervention reduces competition, and has the effect of holding the price up in what would otherwise be a competitive market.

With regard to equity (or fairness), views will differ. Some people may think that all existing egg farmers should be able to cover their costs and make a reasonable profit after selling their output. Some may believe that the competitive process should operate, thereby rewarding the most efficient producers and causing those who cannot make a reasonable profit in an unregulated market to fail and try to employ their resources elsewhere. A competitive market would also provide domestic consumers with eggs at a lower price. While one group of people may feel it is unfair to consumers or taxpayers to use tax dollars to keep egg prices higher than they would otherwise be, another group may believe that the side effect of helping foreign countries keep their food costs down is a worthy one. This list does not exhaust all possible views on the matter, but it does serve to illustrate some of the main issues involved.

Posing the question of "who gains and who loses?" can help to clarify the broader issue of economic equity, but it does not assure a resolution of the question. In terms of helping domestic egg producers, the competitive market alternative is clearly a minus (−), which we have entered in the appropriate cell of Exhibit 8: producers do not want lower prices. But this alternative is a plus (+) for domestic consumers, who would buy eggs for 65 cents instead of 72 cents per dozen. The competitive market alternative would not directly involve state taxpayers or foreign producers or consumers, so we have entered a zero (0) in each of these cells under the heading of "equity."

Still under equity, adoption of the state board purchase plan is a plus (+) in helping domestic egg producers, but the plan receives a minus (−) for its effects on domestic consumers and state taxpayers. Consumers clearly lose because they pay 72 cents rather than 65 cents for eggs. At 72 cents they will be able to buy fewer eggs, and they may have less money to buy other things as well. State taxpayers will have to pay the difference between the 72 cents the egg board pays for eggs and the lower price received when the eggs are sold abroad. The taxpayers would also pay for the administration, storage, and shipping costs associated with the purchase of eggs for resale abroad. Another consequence of the egg board's foreign sales is the impact on foreign egg producers and consumers. The effect on foreign egg producers would be a minus (−) because supply would increase and price would decline in their markets. At the same time, the lower price would be a plus (+) for foreign egg consumers.

The effects of the two policies on the economic "security" of various groups are much the same as the effects on equity, as the completed grid indicates. In brief, compared to the competitive market alternative, the economic security of domestic egg producers (and of foreign consumers) is helped by egg purchases for resale abroad, but this comes at the expense of the economic security of foreign egg producers and domestic consumers.

The completed grid in Exhibit 8 shows three pluses, two minuses, and five zeros for the competitive market alternative; it shows four pluses and six minuses for the price support alternative. Different sets of pluses and minuses would no doubt be obtained if different goals or criteria had been employed. We use this grid only to illustrate the use of an orderly method of problem solving. Such a grid cannot be relied on to resolve an issue completely, but it does help to clarify the choices and trade-offs involved, and it often reveals the need for additional alternatives and additional criteria to analyze specific cases.

5. DECIDE WHICH ALTERNATIVE BEST LEADS TO THE ATTAINMENT OF THE MOST GOALS OR THE MOST IMPORTANT GOALS

Individuals may assign different weights to the various pluses and minuses shown in Exhibit 8 and thus reach different conclusions about the case. People for whom economic efficiency is the most important goal would choose the competitive market alternative. People who think that the government should promote rather than reduce competition would make the same choice. Egg producers and others who believe the government should help support their income would choose the egg purchase alternative. If not, they might suggest an equity or a security alternative for egg producers that is less adverse to efficiency and to the interest of taxpayers and consumers. Thus, the process of orderly problem solving not only can clarify choices and trade-offs but can also reveal the sources of disagreements about various policies.

What If Peace Breaks Out?

This case emphasizes the macroeconomic aspects of a hypothetical situation: the United States and the Soviet Union agree on a large mutual reduction in defense spending that does not result in a military threat to either country. Although many of the economic concepts employed are different from those employed in the egg case, the orderly, reasoned approach to reaching a decision is the same.

For purposes of analysis and illustration, consider the consequences were the following imaginary report to be real.

> Washington—The U.S. and USSR today agreed on a mutually verifiable arms reduction treaty. Spokespersons for both countries emphasized that the treaty would permit a reduction in military spending without jeopardizing the basic national security of either nation.
>
> Under the treaty's terms, the United States is committed to reduce defense spending by $50 billion a year for each of the next three years, a total of $150 billion in all. The Soviet Union is committed to a similar reduction in its defense spending.
>
> Both the President of the United States and the President of the Soviet Union hailed the treaty as a major breakthrough in the search for peaceful coexistence which should improve international relations for years to come.

What would be the impact of such a treaty on the U.S. economy, and what would be the appropriate response in terms of economic policy? This would depend on the economic situation at the time. If, for example, the United States was experiencing an acute demand-pull inflation with relatively full employment, the impact and appropriate policy response would be quite different than if the country was in the midst of a severe recession with stable prices and a high rate of unemployment. To simplify the analysis, let us assume that the economy is in a generally satisfactory condition at the time the treaty goes into effect: the unemployment rate is low, inflation is under control, both the money supply and real GNP are growing at about 4 percent a year. These conditions would call for the United States to maintain the existing levels of aggregate demand and total employment while facilitating the movement of productive resources from defense to nondefense uses.

In some respects such a situation would be similar to the one facing the U.S. economy at the end of World War II, when military spending fell from 42 percent of GNP in 1944 to 4 percent of GNP in 1948, but there would be important differences. On the one hand, a three-year $50 billion annual reduction in defense spending today would cause a far smaller reduction in the percentage of military spending to GNP. On the other, the assumed present-day economy does not have a huge pent-up consumer demand similar to that caused by the Great Depression of the 1930s and the widespread unavailability of consumer goods in the early 1940s during World War II. We will use the five-step reasoned approach to examine the alternatives for dealing with the issues in this case.

1. STATE THE PROBLEM OR ISSUE

In the absence of any other action, a decrease in defense spending of $50 billion a year for each of three years would cause a decrease in aggregate demand in the economy. (Using the $C + I + G$ approach to aggregate demand, this would be a decrease in *G*, which might later spread to decreases in *C* and *I*. Using the *M* × *V* approach to aggregate demand, the cut in defense spending would show up as a decline in *V* since there is nothing in this situation that would reduce the stock of money per se.*) If the decrease in aggregate demand does not lead to widespread price reductions throughout the economy, the macroeconomic aspect of this problem would involve the need to offset the decrease in aggregate demand. There is also a microeconomic aspect to the problem, since it is desirable to move resources from defense industries to nondefense industries as efficiently and as equitably as possible.

2. DETERMINE THE PERSONAL OR BROAD SOCIAL GOALS TO BE ATTAINED

The macroeconomic goals of full employment, price stability, and economic growth—which were being achieved before the cuts in defense spending—should continue to be achieved, along with the microeconomic goals of efficiency and equity. In addition to these broad goals, peoples' relative preferences for private goods and services compared to public goods and services should be considered as well as their preferences for direct or for indirect government policies. The speed with which new government policies can be put into effect and the diffusion of the impact of government policies throughout the economy must also be taken into account.

3. CONSIDER THE PRINCIPAL ALTERNATIVE MEANS OF ACHIEVING THE GOALS

Monetary policy is one of the two broad means for maintaining aggregate demand. The other is fiscal policy. Fiscal policy presents the options of (a) shifting government spending from defense to nondefense government programs, or (b) cutting taxes and letting individual taxpayers and businesses spend the revenue that was previously used for defense purposes, or (c) some combination of these two options. Consequently, in addition to the task of maintaining the overall level of aggregate demand, there is the question of the new composition of aggregate demand. Monetary policy and tax cuts work through the private sector. Reliance on the two latter options would put the policy emphasis on increased consumer spending and increased investment spending by private businesses. Reliance on a shift in government spending, of course, would operate through the public sector and put the policy emphasis on the provision of additional public goods, services, and transfer payments.

In addition to maintaining aggregate demand through monetary and fiscal policy, the transfer of resources from defense to nondefense uses might be facilitated by a combination of market forces and short-term government programs. Heavy emphasis might be placed on market forces as well as the self-interest of workers and the owners of capital to transfer resources to wherever in the economy the new demand goes.

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*The symbols used here are defined and discussed earlier as part of concept 15, aggregate demand, in the section on macroeconomics.

At some point, however, it may be suggested that if the excess resources in the defense industry are to be transferred efficiently to match shifts in demand, the government should provide temporary help through special unemployment benefits, retraining programs, moving allowances, tax write-offs for capital equipment in defense-related industries that has become useless, and the like.

4. SELECT THE ECONOMIC CONCEPTS NEEDED TO UNDERSTAND THE PROBLEM AND USE THEM TO APPRAISE THE MERITS OF EACH ALTERNATIVE

As we have indicated, the concepts of aggregate demand (number 15 in the list that appears in Chapter III), unemployment (16), inflation and deflation (17), monetary policy (18), fiscal policy (19), markets and prices (7), and the role of government (12) are clearly relevant to analyzing this case. Those who want to pursue a more detailed analysis than is provided here might also add the concepts of opportunity cost (2), competition and market structure (9), income distribution (10), and market failures (11) in order to explore the differences between the defense and nondefense sectors of our economy.

Since the alternatives of using monetary policy and fiscal policy to maintain aggregate demand are not mutually exclusive, and since various combinations of tax cuts and shifts in government spending are also possible, we do not present a detailed decision-making grid for this case. Instead, we analyze briefly how each of the main possible policies squares with the goals we would like to achieve in adjusting to a world of reduced defense spending.

Monetary Policy

Some increase in the money supply would probably be necessary to offset the likely decrease in the velocity of circulation immediately following the cut in defense spending, and the Federal Reserve would also want to try to lower interest rates temporarily to encourage more business investment. A drawback in employing monetary policy to ease the economic adjustment being considered is that it often takes some time for changes in monetary policy to work their way through the system; further, changes in monetary policy affect certain sectors of the economy more than others. The housing and durable goods industries are particularly affected by the alterations in interest rates brought about by changes in monetary policy.

Shifts in Government Spending

Shifting government spending from defense industries to nondefense industries or to transfer programs might seem to be relatively easy to carry out, but experience suggests that Congress can be slow in making budgetary decisions, especially when powerful special-interest groups vie for the benefits of new government programs. People or groups who favor private spending over public spending would oppose this policy route. Moreover, it frequently takes considerable time to launch new government programs even after the appropriations have been approved. Specific government projects tend to have a more concentrated initial impact than do transfer programs or tax reductions—policies whose effects are widely spread through the entire economy.

Tax Reductions to Stimulate Private Spending

Experience suggests that people would probably save part of any tax reductions; so the government would need to cut taxes by more than $50 billion a year to get an immediate increase of $50 billion in private consumer spending. Proposals to change taxes are also prone to run into delays in congressional decision-making. Once enacted, however, tax reductions can have immediate and widespread economic effects throughout the economy.

5. DECIDE WHICH ALTERNATIVE BEST LEADS TO THE ATTAINMENT OF THE MOST GOALS OR THE MOST IMPORTANT GOALS

As the preceding analysis makes clear, an appropriate combination of monetary and fiscal policy can maintain aggregate demand so as to help promote full employment, price stability, and economic growth. Selecting the optimum combination of policies, however, is not without difficulties, and the actual combination selected will depend on the weight given to the various broad social goals we have discussed earlier.

VI. Grade Placement of Concepts

Experience with the first edition of the *Framework* indicated that this second edition should include a brief statement on the possible grade placement of the basic economic concepts it contains. Research on the teaching and learning of economics has not yet provided a definitive answer regarding the optimal sequence in which to present economic concepts in the K–12 curriculum. On the basis of the body of economic education research that is available, and the applicable research from other disciplines, however, we can offer some suggestions to curriculum planners and teachers who are responsible for selecting and organizing the content of the economic education curriculum. The suggestions offered here stem from an examination of the nature of the economic concepts we have described, the curriculum context into which the study of economics is most likely to be included, and the developmental characteristics of students at different ages and grade levels. All three aspects must be considered simultaneously when discussing which concepts should be taught, in what order, and at what grade levels. June Gilliard, the Joint Council's curriculum director, has also examined the teaching activities published in the *Strategies* volumes of the Master Curriculum Guide series, and she has classified them as shown in Exhibit 9, below.

Curriculum Context and Grade Placement

The grade placement of economic concepts has to some extent been influenced by traditional curriculum patterns in social studies education. The ease with which economic concepts can be integrated or fused with these and other curriculum patterns prevalent in schools is often a major consideration in determining the proper placement of such concepts in the elementary and secondary grades. Traditional social studies programs, for example, are by and large based on the rationale of "expanding environments," i.e., they generally begin in the earliest grades with topics that are temporally, spatially, or psychologically close to students and proceed to more remote topics as students mature and progress into the intermediate and upper elementary grades. The resulting sequence of social studies topics (e.g., family, home, school, community, state, nation, etc.) serves as the context for much of the economics that is taught in the early grades. Likewise, the traditional practice of teaching U.S. history in the fifth, eighth, and eleventh grades has also influenced the selection and sequencing of economic concepts at these levels.

In general, concepts acquired in a meaningful context are easier to remember and apply than are concepts acquired by rote. For this reason, the "relevance" or applicability of economic concepts to student experience is a major consideration in determining the appropriate placement of such concepts in the curriculum. The *Trade-offs* audiovisual series, for example, was designed for use in the upper elementary and the middle school grades. Therefore, the series emphasizes typical incidents and events experienced by children nine to thirteen years old. For this same reason, the *Give & Take* audiovisual series* for secondary schools uses situations appropriate for a somewhat older group of teenagers.

The Nature of Economic Concepts and Grade Placement

While the existing sequences of courses or topics that provide the context for economics teaching are important, existing sequences should not dictate completely the selection and ordering of economic concepts with respect to the K–12 curriculum. Consideration of the structure of economics as a discipline is essential to deciding the sequence in which to introduce economic concepts. In economics, as in other disciplines, certain concepts serve as "building blocks" for the understanding of other concepts, and each concept or concept cluster has certain characteristics that determine its suitability for study at various points in a student's education.

Among the criteria most frequently used for assessing the appropriateness of economic concepts for particular student groups is the criterion of "complexity." Economic concepts considered to be relatively simple or easy to learn are generally placed at the lower grade levels; those considered more difficult or of a higher order of complexity are most often studied in the middle grades or high school.

There are those who suggest that even the most complex of economic concepts can be taught at the earliest grade levels. We cannot ignore this possibility, but we withhold judgment until research shows that these concepts can be taught more efficiently early on rather than by waiting until students are intellectually more mature.

The complexity of concepts, however, is often affected by instructional factors such as the particular relationship or set of relationships selected for study, the materials used, the pace and quality of instruction, and what the students are expected to learn. For example, courses in economics designed for high school students and for Ph.D. candidates may both include studies pertaining to competition and market structure. One would expect, however, that the specific contents and the depth of student learning in the two courses would differ appreciably.

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*The JCEE participated in producing both of these series.

Instructional Sequencing of Economic Concepts

In devising strategies for developing and amplifying the use and meaning of economic concepts, teachers should, wherever possible, observe the following rules of sequence:

Simple to complex
Concrete to abstract
Known to unknown
Familiar to unfamiliar
Observation to reasoning

To the fullest extent possible, lessons and units of study should stress application rather than abstract theory. Shorter activities should be integrated with and related to sustained long-term activities. Students should be encouraged to use specific economic concepts in discussing and thinking about possible group or individual long-term projects. Students should also be encouraged to relate one concept to another, and to relate specific concepts to their own experiences.

Strategies for Teaching Economics at the Various Grade Levels

The *Teaching Strategies* in the Master Curriculum Guide series provide examples of a number of means of integrating economics into topics and courses commonly taught in elementary and secondary schools. The *Strategies* volumes also provide a number of illustrations of how the same economic concept can be taught with increasing sophistication and relevance at various grade levels and in different curriculum contexts. The concept of money provides an example of this developmental approach. The volume for grades 1–3 has a series of activities (pp. 118–123) designed to show that the use of money is a more efficient way of exchanging goods and services than exchange by barter. The volume for grades 4–6 contains two units (pp. 52–58) that amplify the concept of money and introduce the use of checks and banks. The volume for grades 7–9—junior high school—contains a more sophisticated barter game (pp. 28–30), and the volume for secondary level U.S. history deals with problems of monetary policy and inflation during the Jacksonian period (pp. 30–33). As the Joint Council produces additional *Strategies* volumes, revises previously published ones, and develops other new material, the number of developmental sequences will grow.

Exhibit 9 presents Gilliard's comprehensive cataloging of the 213 separate teaching activities in the MCG *Strategies* volumes that have been published to date. Her classification is by broad concept categories, grade levels, and cognitive categories. The three cognitive categories were condensed from the six originally described by Benjamin

EXHIBIT 9

Classification of Elementary- and Secondary-Level Student Activities in MCG *Strategies* Volumes by Main Economic Concept Categories and Cognitive Level Groups

	Number of Student Activities	
	Elementary (grades K–6)	**Secondary** (grades 7–12)
FUNDAMENTAL ECONOMIC CONCEPTS		
Cognitive Level		
A	63	24
B	16	10
C	10	12
Total	**89**	**46**
MICROECONOMIC CONCEPTS		
Cognitive Level		
A	17	11
B	4	5
C	3	16
Total	**24**	**32**
MACROECONOMIC CONCEPTS		
Cognitive Level		
A	5	1
B	2	2
C	4	3
Total	**11**	**6**
INTERNATIONAL ECONOMIC CONCEPTS		
Cognitive Level		
A	0	1
B	0	1
C	0	3
Total	**0**	**5**

*The cognitive-level groups correspond to Bloom's taxonomy as follows: Level A = "knowledge" or "comprehension"; B = "application"; C = "analysis," "synthesis," or "evaluation."

Bloom and his associates.* Gilliard's cognitive category A corresponds to the types of activities Bloom has termed "knowledge" and "comprehension." Cognitive category B corresponds to Bloom's category "application," and category C corresponds to Bloom's categories of "analysis," "synthesis," and "evaluation."

As can be calculated from Exhibit 9, 135 (63 percent) of the 213 separate teaching activities deal with the six concepts we have termed "fundamental economic concepts." Activities exist to teach these concepts with increasing cognitive sophistication in each of the multigrade groupings. Teachers generally perceive these concepts as being relatively easy to teach and learn because most can be easily personalized or presented in contexts familiar to elementary and secondary school students. These concepts also tend to be easily integrated into various

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*Benjamin S. Bloom et al., eds., *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain* (New York: McKay, 1956).

curriculum structures prevalent in schools. As one moves along in Exhibit 9 from the fundamental economic concepts to microeconomic concepts, to macroeconomic concepts, to international economic concepts, the available teaching activities become fewer. Of those that are available, fewer appear for the elementary grades while relatively more appear at the secondary level. This reflects a combination of factors: the concepts involved are increasingly more complex, macroeconomic concepts and international economic concepts are more compatible with the existing curriculum at the secondary level, and these concepts are more relevant to the knowledge and interest of students at the higher grade levels.

We must emphasize that Exhibit 9 reflects a cataloging of experience to date. It is not meant to suggest limits to economics instruction at the various grade and cognitive levels. Knowledge gained in the future may alter the table significantly. In particular, we would like to encourage educators to develop more activities in macroeconomics and in international economics; but we have no wish to limit the creativity and imagination of individual teachers and curriculum designers in any way. On the contrary, we want to encourage experimentation with new and innovative ways of helping students learn and apply all the basic economic concepts described in this *Framework*.